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# THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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## MEDICAL OUTLOOK\*

H. L. FANCHER, M.D., CHATTANOOGA

THE honorable and honored profession of medicine has done so much in the past to lift the people out of disease and despair, that those of us who hold the degree of Doctor of Medicine are inclined to think too much of the achievements of our fathers, and too little of what must be the results in the future of our own labors.

Superstition in the past has been so intimately connected with both medicine and religion that the progress of the two has been similar to Bunyan's Pilgrim's Progress. But so far as medicine is concerned, it has made progress, sometimes too slowly, and sometimes too rapidly. When I say too rapidly, I mean that the public cannot keep up with us. If it were not for the fact that for every ten things that we think we have learned and taught our patients, we must eventually unlearn and unteach nine of them. We can change our views, but not so with the public.

The medical profession has worked single-handed, and I might say *alone*. We have, as physicians, had a wonderful personal, individual, and family influence in our community. The individual appreciates that personal, individual interest.

The family or personal physician is passing, slowly but surely, unless the trend of the times, from a medical standpoint, is changed.

What is the outlook? As long as we live in the past we cannot do justice to the present or correctly visualize the future.

The profession in this country has been independent, proud of its achievements, and allopathic to the core.

We are justly proud of the work of our fathers in medicine in this country, and take a personal pride in the achievements of our own generation when we know that the entire medical world is today looking to America.

Why is America now the throne of authority and the Mecca for the medical world? Why did France, England, Austria and Germany hand the gavel over to this country when they, in their respective turns, were the site of medical learning?

America at the present time has the honor and responsibility of being the center of learning of the entire medical world. How long will she remain the center of attraction and the leader of medical thought?

Why is there so little initiative and so great a discontent in the profession of Europe today? This situation is easily understood. The influences in Europe, a

\*Presidential address read before the Tennessee State Medical Association, Knoxville, April 8-10, 1924.

decade or so ago, were very similar to what they are in this country today.

Club, society, insurance, municipal, district, state and national propaganda began. Each influence having selfish motives but patriotically or philanthropically disguised, crept into the professional life, until there was no way for medicine to successfully cope with the "Interests" when the "Interests" had such tremendous odds.

The American College of Surgeons, the American College of Physicians, the American Medical Association, the state, sectional and county medical societies are seriously planning the best methods to ward off, or at least stay off, as long as possible, the fateful day when the profession in America will be fettered like our brothers in Europe.

The government wants statistics at the expense of service; the Big Interests want control of us at the expense of our liberty, and others want something or they would let us alone.

The free venereal clinics, started by the national government, fostered by the Red Cross, and dumped onto the state, are probably doing no good to the public, and making a fizzle at statistics.

The Harrison Narcotic law charges the honest doctor for prescribing an opiate—and almost prevents him from doing it—but seems unable to check the dishonest doctor from commercializing the traffic.

The Shepherd-Towner act will put clerks and nurses in charge of pre- and post-natal care of both mother and child. But they will never know how many abortions have been done.

The government made these three laws presumably for statistics and incidentally may do a little missionary work.

In a medical way the government has done a tremendous good to our people and to our profession in public health without coming in direct contact with the individual or interfering with the personal, private practice of the physician. But the three acts of the government just mentioned are three long arms reaching into the profes-

sional body politic to disturb and aid eventually to change our time-honored system of free and independent efforts for the good of the patient and to interfere with the patient's personal and private relation to his physician.

There are changes in medical education going on today which may be revolutionary. When the strong arm of the Rockefeller Foundation reaches into our institutions of learning and for a price buys control and then makes such a radical change in method and personnel of clinical teaching, it means something.

Big interests, corporations, industries, insurance companies, lodges and clubs are today reaching with a thousand arms into our professional life and influencing our professional acts, and sometimes directing our professional thoughts.

The government making legislation touching the professional life with restrictions, the educational policies radically changed and partially controlled from an outside source, and the big interests affecting more intimately the everyday life of our profession, means something to the future integrity of our profession.

If our own private or professional life was the only thing to concern us, if we could think only in terms of self-preservation, it might not matter. But from Hippocrates down we have been taught to think of the good of others rather than of ourselves — and we have been doing it, and will continue to do it until forced to do otherwise.

Now, as we are the guardians of health, and largely the happiness of the people, what are we going to do?

Will these rapid changes which have been taking place lead on to a more radical interference in our professional life and eventually place us in a torn, tattered, humiliated state existing today throughout most of Europe? Or will it all lead us to higher realms of professional achievement and make the people healthier and happier?

Dr. Barker, of Johns Hopkins, while addressing a recent meeting of public health

workers, asked this question: "If life were to be rigorously regulated—censored, sterilized, antisepticized, de-alcoholized, and asexualized; if we were to be made afraid of life itself in order to live joylessly a little longer—would the end gained justify the means?"

Most of us agree with Dr. Barker, but support in a negative way, every propaganda which presents an attractive exterior.

This is a day of law-making, and it has reached such proportions that, psychologically speaking, so much law-making has produced a great deal of law-breaking, and doctors are not guiltless. If the law-makers do not quit "restricting" and "regulat-

ing," we will probably advise our sons to learn a trade or go into the ministry, where the restrictions are less and the fields are broader.

If my son is to be bartered out and made to court sinister influences in order to exist; if his medical thinking is to be so restricted and influenced by overpowering corporate and political interests, I do not want him to study medicine. A body may be enslaved and remain strong and vigorous, but when a mind is subsidized there can be no more honest constructive thinking. There never was a time when medical men needed to think more seriously of the future than the present.

What is the outlook? Think of this.

## URINARY CALCULI\*

By IRVIN ABELL, M.D., LOUISVILLE, KY.

WE have been accustomed to divide the calculi found in the urinary tract into two classes, primary and secondary, believing that the primary stones were due to defects in metabolism with precipitation of urinary salts within the kidney, independent of any structural change or gross infection, and that the secondary stones were due to chemical changes in the urine dependent upon stagnation and bacterial decomposition. There is a growing belief that all urinary stones have their origin within the kidney, wandering down the urinary tract to be extruded or else to become lodged at some point at or below their place of origin. Infection is coming to be regarded as the cause of kidney stone formation, as it has been proved to be the cause of gall stone formation, and the formation of tartar or stone on the teeth. A hematogenous infection gives rise to an infarct from which mucoid material is exuded, in which other bacteria cause a deposition of urinary salts. This theory (C. H. Mayo) presupposes two types of infection, one producing the infarct and one producing the chemical decomposition of urine and deposition of salt or salts in the mucoid material. Granting such an origin for renal calculi, the rate of growth of the stone will then depend upon its location, the type and virility of the bacteria producing the urinary decomposition, and as to whether or not there is obstruction to the urinary outflow. In the renal parenchyma, rate of growth will be slow due to paucity of urine from which to secure chemical material: in the renal pelvis, ureter and bladder urinary salts are abundantly present for further and possibly rapid growth.

The material upon which this paper is based includes all cases of which I have complete records up to January, 1924, and consists of 118 cases, 87 of which were subjected to operation; of the 31 unoperated cases, in 18 the stones were passed spontaneously or as a result of manipulation, and 13 patients passed from under observation. The diagnoses have been based upon the history and urinary findings, confirmed by the X-ray, cystoscopy, ureteral catheterization and uretero-pyelograms. In the earlier cases of the series all these means of diagnosis were not available, but as each method has been added to our diagnostic armamentarium it has been routinely employed, to which has been added the phthalein test for renal efficiency, both combined and differential. Of the 89 cases in which the calculi were located in the kidney and ureter the x-ray was employed in all but five, these representing the earlier cases; of the 84 patients on whom such examination was made, positive findings were obtained in 82; in the remaining two, the calculi in one were almost of microscopic size, while in the other a uratic calculus three-fourths of an inch in diameter was present. In some few cases the calculi were not revealed at first raying, but were detected at subsequent exposures. This was notably true in one, a male, age 51, giving history of repeated colics referable to left kidney associated with the passage of bloody urine. X-ray of the urinary tract revealed no shadow; cystoscopy showed but one ureter, the left, giving exit to bloody urine; with intravenous phthalein injection 30% of the drug was eliminated from the left kidney in thirty minutes, during which time no urine was collected in the bladder. Feeling uncertain as to lessen in left kidney and being unable to demonstrate a right

\*Read by invitation before the Tennessee State Medical Association, Knoxville, April 8-10, 1924.

kidney, the patient was kept under observation. A severe colic ensued, following which no urine was passed for forty hours; catheterization of bladder revealed it empty. X-ray examination at this time showed a calculus at uretero-pelvic junction. At operation the kidney was found to be approximately twice the normal size, from which observation, in the light of results of previous examination, it was clear that but one kidney was present, the calculus obstruction to the outlet of which had precipitated an anuria, from which the patient rapidly recovered following removal of stone. It is interesting to note that in three patients not included in this series, ages 17-30-52, respectively, each giving a history of colic referable to kidney and each presenting microscopic blood in the urine, shadows were obtained which could not be verified at operation; in one the shadow corresponded to the pelvis, and in two to the lower pole of the kidney. Check plates made subsequent to operation showed the shadow corresponding to the pelvis still present, but as this latter had been opened and explored with the finger, I feel reasonably certain that the material causing the shadow was not in the kidney, but in some other abdominal viscera; in the remaining two the cause of the shadow was evidently intestinal concretion. In a report from the Mayo Clinic made by Judd, *Annals of Surgery*, February, 1920, covering 400 cases of ureter stone, a negative x-ray finding in 9% is recorded, while in 14 cases operation failed to verify shadows obtained on x-ray plates.

#### RENAL CALCULI.

Of the cases embodied in this paper, the calculi were renal in 52; the oldest patient in this group was 65, the youngest 14, average age 39. The right kidney was the seat of calculous formation in 25, the left kidney in 17, both kidneys in four, one kidney and bladder in one, both kidneys and one ureter in one, and one kidney and one ureter in four. The longest duration of symptoms was 20 years, the shortest eight days, average duration six years. Pain

was present as the chief symptom in 70%; in the vast majority the pain consisted of typical renal colic, with or without local sensitiveness in renal area. In one case, a male, age 35, the initial colic 17 years before coming under observation was the only one, such pain as occurred during the interval being an ache, described by the patient as lumbago; 66% showed bladder frequency (in one this was the only subjective symptom); 3% difficult urination, 22% gross blood in urine, 66% gross pus in urine, 65% microscopic blood in urine, 96% microscopic pus in urine. Of this group, 40 were subjected to operation; in 16 the operation consisted of nephrectomy, in two of nephrectomy and double ureterolithotomy, in one of nephrectomy and nephro-lithotomy, in one of double nephro-lithotomy and uretero-lithotomy, in one of bilateral nephro-lithotomy and in 19 of unilateral nephro- or pelvio-lithotomy. It is a significant fact that 19 of the 40 patients presented such extensive destruction of renal tissue as to necessitate removal of the kidney. One patient in this series had had a double uretero-lithotomy done by me at which time a giant calculus weighing one ounce was removed from pelvic portion of right ureter, and a smaller one from corresponding portion of left ureter. Two years later he returned with a calculus in left kidney and a reformation in the right pelvic ureter of a calculus of the same size as that removed at first operation. Differential functional test showed total absence of phthalein in the right kidney secretion and 33% in that of the left. Stone was removed from the left kidney and at a later date the right kidney was extirpated. The situation of the stone in the lower ureter was such that it could not be reached through nephrectomy incision, and no further effort was made to remove it. A second patient in this group had had his left kidney removed six years before coming under my care. X-ray examination showed a large branched calculus in the right kidney and a smaller one in the ureter of the nephrectomized side.

Nephro-lithotomy was done on the right kidney. A follow-up of these patients shows that neither suffers any discomfort as a result of the stone in the ureter of the nephrectomized side. In the cases presenting bilateral nephrolithiasis, the least involved side was operated on first, the operation on the opposite side being done at a later date. This rule was disregarded in one case, the patient furnishing one of the two fatalities in the series; female, age 46, with bilateral renal calculi; condition was thought to be such that both stones could be removed at one sitting with reasonable margin of safety; death from renal insufficiency occurred on the fifth day following a bilateral nephro-lithotomy. In the earlier cases nephro-lithotomy was routinely done; in the later ones pelvio-lithotomy has been the choice when feasible since it avoids unnecessary trauma to renal tissue. The stones removed by operation varied in number from 1 to 32 and in size from a diameter of  $\frac{1}{2}$ -inch to a diameter of two inches. In this group there were two postoperative deaths, a mortality of 5%; one in a man of 55 from acute cardiac dilation following nephrectomy, and one in a woman of 46 from renal insufficiency following a bilateral nephro-lithotomy. Two more patients in this group, one a man of 49 with bilateral nephro-lithiasis and one a man of 33 with nephro-lithiasis of one side and uretero-lithiasis of opposite side, died of renal insufficiency one year after removal of the calculi.

#### URETERAL CALCULI.

Of the 118 patients, 32 presented calculi in the ureters alone, and in five stones were present in both kidney and ureter. The oldest patient in this group was 63, the youngest 22, average 40. The calculi were located in the right ureter in 15, in the left ureter in 15, in both ureters in two, in one ureter and both kidneys in one, in one ureter and opposite kidney in one, in left ureter and left kidney in two, in right ureter and right kidney in one. The longest duration of symptoms was 20 years, the shortest two days, average duration four

years. Pain constituted the chief complaint in 98%; bladder frequency was present in 53%; difficult urination in 9%; gross blood in urine in 50%; gross pus in urine in 10%; microscopic blood in urine in 85%; microscopic pus in urine in 97%. Seventeen of this group came to operation, an uretero-lithotomy being done on 14, a double uretero-lithotomy and a nephrectomy on two, and an uretero-lithotomy and a double nephro-lithotomy on one, with no mortality. Where the stone was above the pelvic brim it was approached through a lumbar incision, and when in the pelvic portion of the ureter through a straight rectus or muscle splitting incision in the lower abdomen; the ureter was routinely exposed extraperitoneally and the incision in its wall closed by interrupted sutures of catgut, care being taken that these did not penetrate its inner coat. There was no mortality in this group. Of the remaining 20 patients in this group, 11 passed the calculi spontaneously, seven after cystoscopy, ureteral catheterization and the injection of olive oil into ureter above point of lodgment of stone, the remainder with no help other than the drinking of an abundance of water. Failure to dislodge a small stone in the pelvic ureter by means of ureteral catheter was experienced after several efforts; the duration of symptoms and the continuation of severe colics led to its removal by operation, the stone being of oxalic composition, diamond shaped with two sharp ends firmly imbedded in ureteral wall. In the 17 operated cases, single calculi were present in 16, multiple calculi in one; the size varied from a few grains to one ounce.

#### BLADDER CALCULI.

In the series there were 34 cases of bladder calculi, 21 of which were observed in bladders without obstruction to the outlet and 13 in bladders with obstructed outlet due to prostatic hypertrophy. The oldest patient was 83, the youngest 15, average 62. Longest duration of symptoms 15 years, shortest one day, average duration five years. In these cases urinary fre-

quency was present in 97%, difficult urination 50%, obstruction 33%, gross blood in urine 44%, gross pus in urine 92%, microscopic blood in urine 62%, microscopic pus in urine 100%. Of these patients but 19 were subjected to x-ray examination, all with positive findings. In the remaining early cases the searcher and the cystoscope were relied upon to confirm the diagnosis suggested by history and urinary findings. All 32 came to operation; in one the stone was removed by perineal cysto-lithotomy, in 15 by supra-pubic cysto-lithotomy, while in 13 they were extracted in the course of the removal of enlarged prostates, three by perineal and 10 by suprapubic route. Three occurred in women of advanced years and were removed by vaginal cysto-lithotomy, suturing the bladder incision and draining the bladder with a Pezzer catheter inserted through the urethra. They varied in number from 1 to 12 and in size from a few grains to one weighing eight ounces. In this group there were two deaths, a mortality of 6.25%, both from renal insufficiency, one case, male, age 60, dying on fifth day after suprapubic cysto-lithotomy under spinal anesthesia; the second case, male, age 77, dying on eighth day after suprapubic cysto-lithotomy under gas anesthesia.

#### RECURRENCE.

No attempt has been made to follow up the patients in this series and determine by x-ray examination the percentage of recurrence; in the few instances comprising comparatively large groups of cases where this has been painstakingly done the percentage has varied from 14.8% to 48%. Of the 40 patients in the series herewith reported subjected to operation for nephro-lithiasis two had had calculi previously removed in other clinics and six upon whom the primary operation was done by me have since reported with recurrence of stones, a total of eight or 20%. If the opportunity of making a careful examination of the remainder had presented, doubtless a higher percentage would be shown. Of the six cases return-

ing with recurrence, four have been re-operated; in two a nephrectomy was done; in one a right pelvio-lithotomy, this patient at present showing a recurrence in the left kidney; in the fourth patient the first operation was a left nephro-lithotomy followed by a recurrence of multiple stones in pelvis and calces, for which a left nephrectomy was done. This in turn was followed by a recurrence of a large branched calculus in the right kidney which was removed by nephro-lithotomy and at present he has a recurrence representing his fourth crop of stones. A satisfactory explanation for the recurrence of renal calculi is as elusive as one for their primary appearance; the latter is at best but imperfectly understood, while the former may be regarded as "left overs" and as true recurrences. Considering the complex formation of pelvis and calices and the difficulty and at times impossibility of mobilizing and delivering the kidney for satisfactory examination and manipulation, one readily understands how small stones may be overlooked and how minute particles of soft or large, branched calculi may be fractured in removal and remaining undetected, serve as nuclei for continued stone formation. The operative trauma done to renal and pelvic tissue may at times furnish the colloid material necessary for the deposition and cohesion of urinary salts. Excluding the "left overs," it is difficult for me to escape the conclusion that the true recurrences are due to infection, since in the comparatively few cases in which I have observed reformation of renal calculi infection has been an intractable feature. If the primary stone has caused a dilation or distortion of the ureter, pelvis or calices resulting in impaired drainage facilities the persistence of infection will most likely lead to stone reformation. This is so evidently true that nephrectomy should be the operation of choice when such a condition exists, granted that the opposite kidney and ureter are healthy.

Careful and complete removal of calculi, followed by the elimination of infection, the

maintenance of urinary acidity and the copious drinking of water, is, in the light of our present knowledge concerning their origin, the most efficient regime for the prevention of recurrence.

#### CONCLUSIONS.

1. Urinary calculi are of bacterial origin.
2. In lithiasis of the urinary tract stones are present in two or more organs in from 10 to 15%. Twelve of the 118 cases herewith reported presented stones in two or more organs, a percentage of 9.5%.
3. In renal and ureteral calculi pain is the chief symptom in 70 and 98%, respectively; in bladder calculi urinary frequency is the chief symptom in 97%.
4. In renal and ureteral calculi microscopic blood is present in 65 and 85%, respectively.
5. In bladder calculi microscopic blood is present in 62% and microscopic pus in 100%.
6. Anuria develops when both ureters become blocked by stones or when the ureter of the only functioning kidney becomes blocked by stone.
7. Reasonable efforts should be made to secure the spontaneous passage of small stones,  $\frac{1}{4}$  inch or less, situated in any portion of urinary tract. Such efforts consist in the use of the cystoscope, of ureteral catheterization with injection of papaverin or olive oil at or above site of stone lodgment, and the stimulation of diuresis by drinking an abundance of water.
8. Such methods should not continue to be relied on in the presence of active infection, continued colics without downward progress of stone or where there is marked hydro-ureter above site of stone impaction.
9. When bilateral nephro-lithiasis exists the least affected side should be operated on first.
10. Pelvio-lithotomy, when feasible, is to be preferred to nephro-lithotomy in that it conserves renal tissue and renders less liable the occurrence of secondary hemorrhage.
11. If the renal tissue shows much destructive change as a result of infection, nephrectomy is the preferable procedure, wanting the presence of a healthy opposite kidney; the retention of such kidney frequently means the recurrence of stone.
12. Before all operations for removal of urinary calculi tests for renal efficiency should be made; if operation is to be done on the kidney or ureter the test should be a differential one.
13. All urine containing pus and blood, either one or both, calls for urologic examination of patients from whom obtained.
14. Such examination should include analysis of patient's history and symptoms; physical examination; study of bladder and separate kidney urines; x-ray examination of both kidneys, both ureters and bladder; cystoscopy with ureteral catheterization; and if indicated of uretero-pyelography.
15. The x-ray, cystoscope and uretero-pyelogram give accurate knowledge as to size and location of calculi; when properly interpreted, the chance for error is reduced to a minimum.

## THE NON-SURGICAL MANAGEMENT OF SQUINT\*

By LUTHER C. PETER, M.D., PHILADELPHIA

AT the last meeting of the Pennsylvania State Medical Society, I addressed the Eye, Ear, Nose and Throat Section on "The Choice of Operation in the Surgical Treatment of Concomitant Squint." The presentation of a surgical subject seems to possess more interest to an average audience of specialists than the discussion of the medical side of a question, even though the latter is, in most instances, the more important. Notwithstanding this general preference, I have elected to discuss with you today the more important phase of the treatment of squint—namely, the non-surgical measures which should be employed before surgery should be considered.

If each one of us were to critically review the case histories of the patients upon whom we have operated for squint, and were to ask ourselves the question, "Was each case given all the care and study which the case demanded before he or she reached the stage when operation became necessary?" there is no doubt that all would be obliged to admit that many cases came to operation without sufficient study. The first great source of trouble with which the ophthalmic surgeon has to contend is the neglect of parents through lack of knowledge. It is not unusual, even now, to hear that the family physician has advised against any treatment until the child is old enough to go to school. Other advice, not infrequently offered, is to "give the child an opportunity to grow out of the squint." While he is given this opportunity to "grow out of the squint," he must surely grow into amblyopia, which he carries with him through life, even though he eventually

may have his eye straightened by a cosmetic operation.

This is the parents' and the family physician's side of the neglect, over which we, as specialists, have no control other than the proper training in fundamentals while the physician is still in college. What is needed in our medical colleges to-day is *better training* in the A. B. C.'s—the fundamentals of the specialties, rather than *less training* as the Advisory Council of the A. M. A. would have us believe.

The neglect of our little squinting patients, however, can not all be attributed to the parents and to the family doctor. Many of these little patients are given a perfunctory test for glasses, and if the eyes do not straighten after a fair trial, operation is advised and performed. What the results are under such management you all know.

It is, therefore, because of this general tendency to treat squint in a rather indifferent manner, that I have ventured to discuss with you the non-surgical treatment of the condition.

Although the etiology of concomitant squint admits of much latitude in discussion, it is now generally accepted by those who have given much thought to the subject that the great underlying factor is a defective or absent fusion faculty. It would be going too far afield to give the reasons for this belief. For our purpose in this discussion, however, it is important that we call your attention first to the fact that refractive errors are usually negligible in true alternating squint, while the fusion faculty is totally absent or very defective and single binocular vision is rarely obtainable. The second fact to which I wish to call attention is the relatively small number of patients who squint, as com-

\*Read by invitation before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, Knoxville, April 8-10, 1924.

pared with the millions of hypermetropes in the world with refractive errors as high as those found in squinting patients. Furthermore, in the so-called unilateral cases, if properly examined, the fusion faculty is usually found to be deficient. These are but two of the many facts which might be advanced as sufficient reasons for believing that the accommodative theory of the etiology of squint can explain but a part of the cases which fall under our care. A defective or absent fusion faculty, therefore, we believe to be the great underlying cause of squint.

The most important contributing causes are refractive errors, hereditary tendencies, muscular anomalies, febrile disturbances and acute illness, profound shock from fright, convulsions, etc. The role of refractive errors should be emphasized. They constitute the chief contributing factor, especially if the spheric defects are unequal. The role which heredity plays is largely the inheritance of a tendency to weak fusion and hereditary predisposition to high hypermetropia or myopia. Muscular anomalies are of comparatively rare occurrence and figure in but few cases. Acute illness and shock from fright, convulsions, etc., are acute precipitating factors in cases which occasionally squint earlier in life.

In addition to a knowledge of the etiology of squint, a thorough understanding of the evolution of binocular vision in the child is essential in the management of these cases. At birth, the new born, which usually is hyperopic, possesses light sense and a vertical balance of the ocular muscles which may be considered as well established. Lateral balance is imperfect. The eyes may at times be divergent and at other times convergent. They lack co-ordination. After three or four weeks the infant begins to observe and the attention may be fixed momentarily on bright objects. At the end of six to eight weeks the co-ordination becomes stronger and the attention may be held on bright objects. The mother says "the child sees." This faculty of attention

is psychologically designated as "the unfolding of the faculty of attention." We look upon it as the development of the *fusion faculty*. As the days go by, the faculty of fusion increases in strength, and at the end of a year it is fairly well established. Even at this period, the little aches and pains, to which an infant is subject, may cause temporary and fleeting evidence of squint—the occasional squint which is but an indication that fusion is not yet strong. During the succeeding five years, the faculty for fusion becomes firmly established.

For purposes of treatment the most advantageous grouping of the cases is that into: first, the unilateral convergent type; second, the true alternating convergent squint; and third, divergent squint.

1. *Unilateral Convergent Squint*. Although an objection has been raised by some to speak of a squint as unilateral, the peculiar characteristic of this form of strabismus to become manifest in one eye, while the other eye habitually fixes, justifies the term as descriptive of the type.

The first step in the management of this form of squint, a procedure which is common to all forms, is to determine the status of the refraction. It would seem as though it is almost superfluous to discuss the type of cycloplegic which should be employed for this purpose. Unfortunately, it is only too true that a limited number of advocates of homatropine carry their enthusiasm so far as to employ this drug even in children. Regardless of the advisability of its use in adult life, a matter for more than academic discussion, it is our conviction that it should never be employed in the refraction of children. The most satisfactory drug for this time of life is atropine sulphate. A half percent, or even a one percent solution, should be instilled three times daily for two days before the measurements are taken. Retinoscopy should at all times be practiced at sittings sufficiently numerous to make correct measurements. While the complete spheric error in hyperopia

should be carefully estimated, the cylindric defect is equally important.

In the prescribing of glasses three questions confront us. First, how low an error should be corrected; second, how much of the error should be corrected; and third, how early in life should glasses be prescribed. To the first question, our answer is, on general principles, an error of one diopter of hyperopia with a half diopter of astigmatism, should be considered as of sufficient importance to correct. This is especially true of children of school age. Younger children may be spared the annoyance of wearing glasses of a correction lower than this until such time as they must attend school.

The second question is easily answered. A full sphero-cylindrical correction should be prescribed in myopia. The same applies to hyperopia, with the subtraction of a quarter or half diopter in moderate degrees, and a little larger subtraction in very high degrees, if the full correction is not well born at first.

The age when glasses should be prescribed depends upon the refractive error, and the state of the fusion faculty. The latter in very young children can only be surmised. It is well known that true alternating strabismus appears at an earlier age than unilateral squint. Most instances of the former occur before the end of the second year, while unilateral squint may not appear until the fourth year or even later. As the fusion faculty, as a rule, is totally absent or very defective in alternating squint, it is likely that this type of squint, which appears early, follows as a result of a very defective fusion faculty. This condition can not be overcome by training until the child reaches the age of three or three and a half years. The refractive error, therefore, becomes the main consideration. If the error is three diopters or more, the average child will tolerate glasses without protest as early as sixteen months. This is the earliest age thus far for which I have had occasion to recommend glasses, and in each instance they were tolerated

and after a time were worn as a matter of course. Two purposes are accomplished. Vision, with the aid of the occlusive bandage, is preserved, and the angle of deviation may diminish. In some instances the eyes become straight.

In young children, under three, the second step in the management of squint is the institution of measures to preserve central vision, or the correction of amblyopia if it is present. In infants, when the prescribing of glasses is impracticable, this becomes the first step in treatment. Two methods are practiced: either mydriasis is maintained in the fixing eye or an occlusive bandage is worn over this eye. The use of an occlusive bandage is the better method. Atropine does not entirely prevent the use of the eye and the fixing eye may continue to fix in spite of the drops. In young children, on whom it is difficult to retain a bandage, the drops may of necessity be resorted to. Worth has very correctly pointed out that young children are susceptible to either method, and care, therefore, should be observed that neither method is employed too long, lest the amblyopia be transferred to the other eye. If drops are used, a daily instillation of a weak atropine solution is made in the fixing eye for a period of one week. This should be followed by a period of rest for several days after the pupil has returned to the normal size. This routine should be repeated until the desired results are obtained. If the squint has been transferred it may be necessary, for a brief period, to use the atropine in the formerly squinting eye. During all the treatment, the case should be under observation at least once a month.

The occlusive bandage is best adapted for children three years of age or older. As a means of correcting amblyopia in children up to six or seven years of age, and of improving the vision in older children, when complete restoration in sight is impossible, the method is of great value. It is also of great help in older children, before operation, when the squinting eye has lost its

power of fixation. A celluloid clip placed on the glass is unsatisfactory and accomplishes little but inconvenience to the child. The bandage should be so applied that it will be impossible for the child to see with the occluded eye. If the bandage is worn to prevent amblyopia, its application for two or three hours daily will suffice. This, however, must be determined by regular tests. For these tests, Reber's test chart is most satisfactory for children as young as two years. I have never found Worth's method of using marbles of varying sizes necessary. For amblyopia well established, the bandage should be worn for at least half the day during which the child is awake. After the child has grown accustomed to the bandage, part of the school work should be performed with the squinting eye. The use of the eye at close range is more valuable than use at distance in bringing back vision. Writing, copying and reading are excellent training, and the progress is more rapid and satisfactory when this form of exercise is indulged in with the bandage applied.

*The third step is fusion training.* At the earliest possible age, the state of the fusion faculty should be determined. For this purpose, the Worth-Black amblyoscope is used. Children of three are apt subjects for the determination of Worth's first and second classification of the fusion state. First, does the child have simultaneous muscular perception? A mouse and a trap, for example, are placed in the amblyoscope. If the child can see both when the tubes are placed at the approximately proper angle for his degree of squint, he has simultaneous muscular perception. If he can place the mouse in the trap, the evidence of simultaneous muscular perception is stronger. His inability to do so, however, may be the result of mechanical causes, as for example, the improper angle of the fusion tubes and the inability of the child to properly co-ordinate the tubes because of his tender years. This should be confirmed by varying the objects to exclude error. Second, does he have fusion with-

out the sense of depth? If the child knows the alphabet, an "F" before one eye and an "L" before the other is the most practical test. He may see the two letters simultaneously, but if he can make an "E" out of them, he has fusion. Other similar tests can be used, as for example, a man, in which parts of the man appear before both eyes to aid fusion, but only the complete figure can be seen in fusion. Unless this second stage of the fusion test can be obtained, there can be no assurance that the child has a fusion faculty. If the child possesses this faculty only in part, there is hope of developing a fusion faculty which will answer the third test.

The third test for fusion involves a sense of depth or relief. For this purpose, Mr. Berry's addition to the stereoscope is adapted to the amblyoscope. Two large circles of equal size, to aid fusion, have smaller circles placed to the outer or inner sides. If the small circles are to the outer sides, the appearance to a normal fusion faculty will be that of depth, and the child will see a bucket standing on its bottom. If the small circles are to the inside, the sensation will be that of relief and the illusion will be that of a bucket upside down. This test can be varied by elaboration into baskets and other objects involving the same principle. It is easy of demonstration and offers the surest prognosis of the ultimate outcome of the case.

Having determined the state of the fusion faculty, two propositions present themselves for solution. First, given any one of these three possibilities, simultaneous muscular perception, fusion without a sense of depth, and true fusion with a sense of depth or relief, what bearing does each have on the general outcome of the squint? Second, what can be done to improve and develop a fair but imperfect fusion faculty?

Simultaneous muscular perception without any evidence of fusion does not offer much hope of improvement in the squint unless there is present at the same time a high hyperopic error. If this is present,

any improvement which may follow must be attributed to the correction of the refractive error. This type of case can rarely escape operation. If fusion is present without a sense of depth, the prospect of restoring parallelism by proper training is fair. The results will depend, in a measure, upon the presence or absence of amblyopia and partly upon the correction of a high refractive error. Fusion with a sense of depth, even though imperfectly developed, offers a good basis for treatment and success without operative treatment in a large proportion of cases. Amblyopia of a high degree and a wide angle of squint are the two barriers which usually presage failure. This in part answers the second question, what can be done to improve and develop an imperfect fusion faculty? If one receives the co-operation of the patient, the only obstacle in the way of developing fusion is amblyopia. If vision is good in both eyes, a majority of the cases which fall into this group can be treated successfully without an operation.

In the discussion of the second step of the treatment of squint, it is evident that amblyopia looms up as a barrier with which we must reckon. Its prevention and measures to correct it if present are again impressed upon us.

The scope of this paper will not admit of entering into the discussion of the details of fusion training. It is a subject large enough for a separate paper. We can only outline the treatment. You will naturally ask if these three methods are faithfully practiced, what are the prospects of avoiding operation? If a high degree of amblyopia is present and can not be improved, it furnishes an impassible barrier which usually means that an operation must be resorted to to restore parallelism. If amblyopia is not present and the angle of squint is not too great, the chances for a complete recovery are excellent. In order to appreciate the influence of the angle of squint, it is well to recall that fusion can not take place if the images are too far apart. It is true that by means of the

amblyoscope, the images may be brought closer together by gradually reducing the angle of the tubes. In squint, however, of more than twenty to twenty-five degrees, this is rarely possible and operation must be performed to bring the visual axes within reach of fusion. A wide angle of deviation, however, should not prevent one from following the course outlined, because these measures are essential to make the operation a successful cure instead of a cosmetic operation which is so often practiced. This will be alluded to in our closing remarks.

2. *True Alternating Convergent Squint.* In this group of cases, the refractive error is usually negligible or so slight as not to be counted on as a factor either in the development of the squint or its treatment. The important factor, however, is a totally absent or very defective fusion faculty. In few of these cases can one find more than simultaneous muscular perception. It necessarily follows that the two methods of treatment which are of most value in training can not be successfully employed. If fusion tests show an absent fusion faculty, fusion training may at once be abandoned and the same may be said of refraction. If the first examination shows a low refractive error, glasses should be omitted until the child is of school age, when they may be prescribed according to the rules which are so well known. Until the child is about six years of age, the only treatment which can be given is that to prevent amblyopia and the correction of the same if it has appeared.

At the age of six years operation should be employed to restore parallelism — an operation which can only be performed for cosmetic purposes. The operation may be undertaken a year or two earlier in well developed children, if it is possible to correct the entire deviation by a single advancement with resection. It is not a good procedure, in my judgment, to operate on both eyes at so early an age.

3. *Divergent Squint.* This group of

cases might well be included in the second. They differ, however, in two particulars, namely in that they develop as a rule much later than the convergent squint and second, in that the fusion faculty as a rule is present although not fully developed. The refractive error is hyperopic almost as often as myopic. The error in either case is higher as a rule than in the true alternating convergent type. Refraction, therefore, is important but can not be counted of great value in correcting the divergence. Fusion training is necessary in the interests of paving the way for a successful operation rather than to prevent the operation, which it rarely does. Treatment by means of an occlusive bandage is also important, although amblyopia is much rarer in divergent squint than in convergent. One would naturally conclude that non-surgical measures do not offer a very great deal. This is correct, if they be regarded as measures which will prevent operation. This is, however, not a good reason for allowing the child to drift without treatment until of such an age as might be called operable. All these measures should be rigidly practiced in order to convert a cosmetic operation into one which may be called curative. Some years ago the Greens, in a very well written paper, expressed the thought that operation should be instituted early. In this I fully concur. The best age is about six. There is no good reason why it should be postponed when an operation becomes necessary. There is nothing to gain and much to lose by postponement. In the statement of the Greens, that most of the operations could only be called cosmetic, I can not agree. Proper treatment before and after operation should result in a large percentage of cures. Amblyopia is the crux of the situation in most instances. This can be avoided in a majority of cases.

Finally after operation, non - surgical

measures are of greatest importance. At this stage of the treatment, the amblyoscope is replaced by the stereoscope. The operative interference should be so precisely performed that the images of the two eyes are brought close enough for fusion training by means of the stereoscope. A half hour's daily practice with this instrument will be a wonderful aid in bringing about single binocular vision if the amblyopia is not insurmountable. This instrument demands greater respect than is usually accorded to it. It acts as a stabilizer and improves the muscular co-ordination necessary for the correct execution of innervational impulses. It is especially valuable in esophoria and in the post-operative treatment of squint.

The thoughts which I wish to leave with you are the following:

1. Aim to affect a cure of squint if possible, by non-surgical measures.
2. If surgery becomes inevitable, institute non-surgical treatment before and after operation, in order to make the operative procedure curative rather than cosmetic.

It will be impossible to attain to these high ideals in all cases, even though a fusion faculty may be present. You will all agree, however, that our failures in effecting cures, in which success is potentially present, can be much reduced by greater attention to details. These essentials are:

1. The opportunity for study in infancy and early childhood when the chances for developing a fusion faculty are best, and the prevention of amblyopia is possible.
2. Careful refraction which must be followed up from year to year.
3. The prevention of amblyopia, or its correction by suitable training.
4. Training of the fusion faculty by means of the amblyoscope.
5. Fusion training after operation by means of the stereoscope.

## DOUBLE AMPUTATION OF THE LEGS WITH SOME OBSERVATIONS AND SUGGESTIONS BASED THEREON\*

By JERE LAWRENCE CROOK, A.M., M.D., F.A.C.S., JACKSON

**T**HE case on which this paper is based was admitted to The Crook Sanatorium on the eighth of February, arriving in Jackson on an Illinois Central passenger train about three hours after the receipt of the injury at Greenfield, Tenn.

Case Report. F. C. K., age 22 years, married, ex-fireman on Illinois Central Railroad. Patient's statement regarding the accident: "I tried to catch a freight train to Martin and it threw me." Patient stated he had fired for the Illinois Central Railroad from Freeport to Clinton, Illinois, for six or seven months until about three months ago, when he laid off.

Patient was brought to the Crook Sanatorium in an ambulance suffering greatly. It was a very cold night and he seemed to be suffering from the effects of the exposure as well as from the shock. He was brought into a superheated emergency room and hot water bottles were applied and stimulants given before operation was attempted. In less than an hour's time he had warmed up and seemed to be in fairly good condition for operation.

In order to save time and lessen the shock I requested my associate, Dr. Charles F. Webb, to amputate one leg while I amputated the other one. The right leg was amputated midway between the knee and ankle by Drs. Webb and G. L. Williamson, and the left leg was amputated close to the knee joint by myself, the amputation being so close to the joint that it was thought advisable to disarticulate and remove the head of the fibula. The total time on the operating table was forty-five minutes. General condition at the time of the operation was poor. Treatment during the operation: One quart of normal saline solution per rectum. Interrupted silkworm sutures closed the flaps on both legs.

Patient did fairly well during the night, but next morning at eight o'clock he went into a collapse and when I reached the room he was apparently dying, there being no perceptible pulse. Immediate transfusion of five pints of normal saline solution introduced into the median cephalic vein brought about a rapid change and apparently saved the patient's life.

\*Read before the Section of Railway Surgeons of the Tennessee State Medical Association, Knoxville, April 8-10, 1924.

Subsequent history: One of the legs healed by primary union. The other, where some doubtful tissue was used in order to avoid a higher amputation, took on an extensive sloughing of both the muscles and skin. When the sloughs had been removed and the tissues had become healthy, a secondary amputation was performed at the knee joint on March 18. At this time the tibia and fibula were disarticulated, leaving the patella and the patella tendon as a cushion. The remainder of the skin was freed from the subcutaneous tissues and brought together smoothly over the stump. Patient has now about recovered from the second operation.

The experience gained in this case has convinced me that two factors in the treatment were responsible for the saving of the patient's life. The first was the synchronous amputation by two surgeons, and the second factor was the prompt and rapid use of normal saline solution intravenously at the time of the collapse the morning after the operation. The necessary prolongation of the operation which would have been required for the same surgeon to have performed both amputations, I believe, would certainly have resulted in the patient's death from additional shock. Had the normal saline solution been omitted next morning the patient would have died from the secondary collapse. Therefore, I simply wish to stress the importance of these two procedures in the treatment of this case and beg leave to suggest that these measures should be a routine practice in all similar cases.

There should be at hand in all hospitals normal saline solution in sterile containers equipped with rubber tubing and sharp needles, so that no delay in their preparation would be required. With a sharp needle it is a very simple matter to pierce the vein through the skin without even dissecting it loose from its bed. Most of us have had so much experience in intra-

venous therapy during the last few years that we have become expert in "sticking" veins. As soon as the vein is entered the solution immediately begins its life-giving flow throughout the patient's blood vessels, and immediate results may be expected. If ever there was a lifesaving measure in desperate cases, the intravenous saline

transfusion in cases of this kind truly measures up to that claim. I believe that by emphasizing the two points outlined above, this simple paper may prove of some benefit to the members of this Association who are so often called upon in similar emergencies.

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## DR. FRANK DAVID SMYTHE

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PRESIDENT TENNESSEE STATE MEDICAL ASSOCIATION  
1924-1925

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An Appreciation by Wm. Britt Burns, M.D., Memphis

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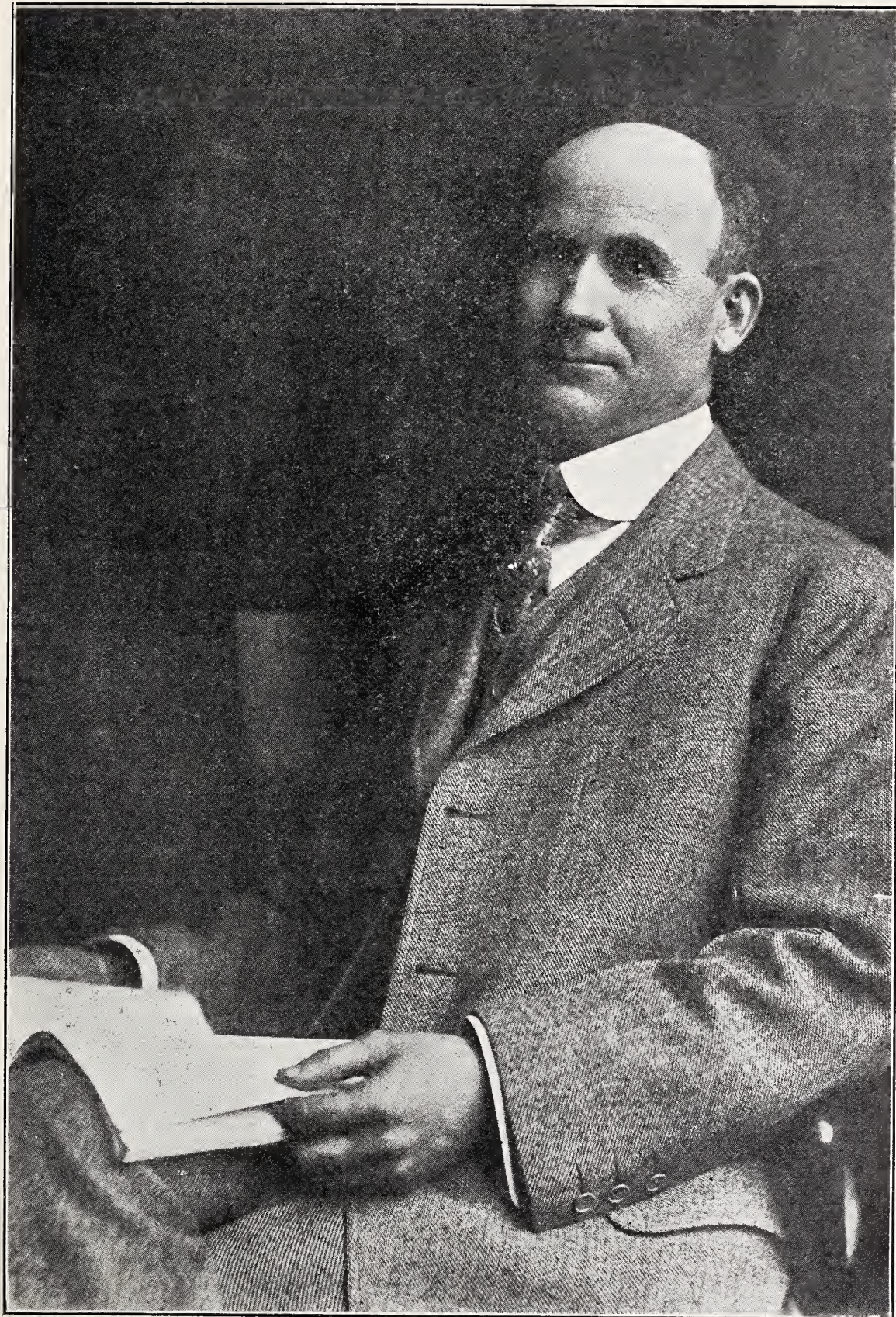
**D**R. Smythe was born in Kosciusko, Attala County, Mississippi, March 10, 1867. His parents were of old English stock on both sides of the house. His father's family emigrated to this country from Oxford, England and landed at Philadelphia in the early part of the eighteenth century. His mother's family, from Lancaster, came to this country about the same period. Both families migrated to South Carolina, where many members of the families still reside. They removed to Mississippi while it was still a territory and settled near the home of Chief Red Bird who was at the head of the Choctaw nation. His father died some years ago. He played a prominent part during the Civil War and in the political history of the State until the time of his death. As a member of the Legislature, he was largely responsible for the present Medical Practice Act in the State of Mississippi.

His mother is still living at the age of 84, in the full possession of her mental faculties and in the town where she was born. During the World War she enjoyed the distinction of wearing more stars, perhaps,

than any woman in the State of Mississippi. She has endured some of the hardships of four wars, the male members of her immediate family having participated actively in those wars—the Mexican War 1846; the Civil War, 1861-63; the Spanish-American War, 1898-99. She entered into the activities incident to the World War, much as many women of fewer years. Knitting sweaters and socks in the good old fashioned way, and mingling her prayers with the prayers of all good women for a world peace. But for the perfidy of scheming politicians her prayers may have been answered and neither she nor the mothers of other sons would have ever been called upon to supply cannon fodder for another war.

Many of Dr. Smythe's antecedents, on both sides of the house, have been physicians for generations. His uncle, Dr. Gordon Smythe, was the first man to administer chloroform as an anaesthetic in the State of Mississippi.

Dr. Smythe is one of ten children—five brothers and four sisters. Three of his brothers are physicians, one a lawyer; the



FRANK D. SMYTHE, M. D.

other died while studying dentistry at Vanderbilt University. One of his sisters married a physician, so it seems that medicine does run in the family.

Dr. Smythe's early education was obtained at the public school in the town in which he was born. At the age of eighteen, after having finished the course at the Academy conducted by Professor John F. Edmunds, a prominent educator of that period, he went to Texas, engaged in the drug business and began the study of medicine under his namesake and owner of the drug store and a practicing physician in Bryan, Texas. He pursued his vocation and soon became a qualified prescription clerk, and after a period of two years he matriculated at the Tulane University for the purpose of prosecuting the study of medicine. He was well informed on the subject of *Materia Medica* and *Pharmacology* at the time of his matriculation.

At the end of his second year he was awarded the position of interne or resident student and ambulance surgeon of Charity Hospital by competitive examination. At that time positions as internes in first class hospitals were few and competition by many of the best men of the class was very keen and the honor of winning a position as interne in the Charity Hospital was the highest that could be bestowed upon a medical student of Tulane University. An interne's diploma was withheld until after the completion of his two years' course at the hospital.

After having graduated April 1, 1891 he returned to his old home and engaged in the practice of medicine in partnership with Dr. E. C. Coleman, who was the leading physician in Kosciusko at that time. His taste for surgery was early developed and during his internship at the Charity Hospital under the tutorship of Dr. Rudolph Matas, the South's greatest surgeon at that time and who still enjoys that distinction, was his ideal and from him he was inspired to prosecute the study of surgery and to take advantage of the unsurpassed opportunity afforded by the great

Charity Hospital for the study of medicine and surgery, especially surgery.

Dr. Smythe's love for surgery and his desire to relieve those suffering with surgical conditions, inspired him, and it was but natural that he should have begun to do surgical work early in his career. He began to do abdominal surgery, which was practically unknown to the people of that community. There had been only one abdominal section performed on a patient in that county at that time, and that was done at the Charity Hospital in New Orleans. He was unable to get any of the physicians practicing at Kosciusko, with the exception of his associate, to assist in the performance of an abdominal operation for the reason that they did not care to be criticised by the public for being present and participating in an operation that would, as it appeared to them, most certainly end in death for the patient. The peritoneal cavity was regarded as a sacred precinct and not to be invaded by the surgeon.

While living in Kosciusko he was a member of the Town Council and head of the Health Department. He was also a member of the State Board of Health and of the State Board of Examiners and was serving in that capacity when he removed to Memphis. His knowledge of surgical conditions and his skill in the art and his reputation withal grew apace. And upon the death of the lamented Dr. A. B. Holder, Dr. Smythe was chosen by that great surgeon and teacher and administrator, Dr. W. B. Rogers, to become his associate. He removed to Memphis and took up the practice of medicine and surgery in November, 1896. Dr. Smythe immediately became connected with the Memphis Hospital Medical College, now the University of Tennessee, in the capacity of quizmaster on Anatomy and Surgery. He organized the department of operative surgery upon the cadaver the following year and was placed by the faculty at its head. It was, I believe, the first of its kind to be added to the curriculum of any of the medical colleges then in the South. He remained

in charge of this department, demonstrating the various operations upon the cadaver for two hours a day, for a period of three years, and was then chosen to fill the chair of *Materia Medica* and Therapeutics and lecturer on clinical surgery. After three years teaching in those branches he was selected to fill the vacancy in the chair of Gynecology created by the resignation of the late Dr. Thomas J. Crofford, a pioneer in abdominal surgery, one of the greatest of his time. Peace to his ashes.

He remained at the head of the Department of Gynecology until a few years after the merger of the various colleges now constituting the University of Tennessee Medical College.

Immediately following the declaration of war by the United States against Germany, Dr. Smythe offered his services to his country. He received a commission as a Major in the Medical Reserve Corps. He served as examiner of medical men who sought commissions to the medical department of the United States Army.

Dr. Smythe's impelling enthusiasm and gripping spirit constrained men to rally to the colors of their country. He carried the challenge to the entire Memphis territory and medical men responded in such numbers that his station led all the cities in the United States in commissioned medical officers.

Under the direction of the Surgeon General, he organized Base Hospital No. 57 for service in France, and in due season went with his unit overseas.

Dr. Smythe's indomitable energy and his love of and loyalty to the art and practice of surgery was of such an urge as to drive him to forego the command of his unit for the better part of touching those who are sick, those who suffer, those who are wounded—and those who die.

"Oh! Sympathy great that human hearts bind" \* \* \*

No sooner than he reached the determination to give up his command, did he choose his successor, and after much correspondence went to Washington and had him

placed in command. Dr. Smythe about this time reached the rank of Lieut. Colonel and went overseas as Chief Surgeon of his unit. His unit took charge of Red Cross Hospital No. 7, at Juille, forty kilometers from Paris. The wounded and sick in this hospital consisted largely of French soldiers. After September 15, 1918, the organization was ordered into Paris and converted Lycee Montagne, a boys' prep school of the University of Paris, into a hospital.

Dr. Smythe returned to America about the first of January, 1919, and was discharged from the service January 8th. He re-entered private practice and has been thus actively engaged since that occasion. He has served as a member of the surgical staff in practically all the hospitals in Memphis for the past twenty years or more. He has been chief of the staff in some of the hospitals and is actively engaged in committee work on the staff of the Baptist Memorial Hospital at the present time. He is a member of the Gynecological staff of the Methodist Hospital. Much of his time has been devoted as a teacher of medicine and as a teacher of nurses, notwithstanding that he was heavily taxed with a surgical practice of great magnitude.

Dr. Smythe has all of his professional life taken an active part in behalf of organized medicine and has been conspicuous in exerting himself to the utmost of his capacity in behalf of all measures promoting its uplift. To those who have been familiar with the enormous volume of his work for the past quarter of a century, it has been a marvel that he has had the time and the disposition to perform all kinds of committee work in his county society and in civic affairs. He is a positive character and upon every proposition at all familiar to him he will be found definitely upon one or the other side, usually the right side, surely upon the side which he thinks is right.

He was among the first to inveigh against those who would commercialize the practice of medicine. And he has raised his voice,

in season and out of season, against the fee splitter and the medical man with a press agent. He has religiously fought pretenders and shams in the profession and aggressively condemned cults, fakirs and fanatics without. Dr. Smythe's militant spirit is accurately exemplified in a recent address on "Chiropractics, Other Cults and Group Medicine," delivered at a Gridiron Banquet of the Dallas, Texas, Medical Society.

In 1909 Dr. Smythe contributed an epoch-making address to the profession upon "The Duties and Responsibilities of the Surgeon and Some of the Things the Public Has a Right to Expect of Those Assuming to Do Surgery." The address urged the adoption of a scheme whereby the public could and would be protected against many who were undertaking to perform surgical operations of election without sufficient experience and proper preparation. The tenor of the whole address reads much like a tenet of the American College of Surgeons, an institution organized four years later, to promulgate and establish a "Minimum Standard" for and in the practice of surgery.

Dr. Smythe has been a voluminous writer upon the subjects of surgery and gynecology. The writer has before him more than thirty reprints of his contributions to medical literature, and there are probably as many more such contributions in the medical magazines of the country that were not reprinted. All of the important phases of surgery and gynecology are learnedly and accurately discussed and the subject matter of his contributions is fully abreast and often far in advance of the consensus of thought and opinion of the times.

Outside of his specialty of surgery and gynecology, his "Lectures on Materia Medica and Therapeutics," edited by Dr. J. L. McGehee, were used as a text book by the students during the tenure of professorship in that chair.

His course of lectures to the nurses of the senior class at the Memphis General

Hospital School for nurses was put in book form and used as a text book for pupil nurses under the following caption: "Fourteen Lectures Delivered to the Senior Class of the Memphis General Hospital Training School for Nurses on the subject of Gynecology, Including Two Lectures on the Subject of Cancer in General and Cancer of the Uterus."

Dr. Smythe has been repeatedly urged to write a book on some surgical subject, and especially a work on abdominal surgery or gynecology. That work, however, he never undertook.

His writings have borne the stamp of originality. He has not resorted to much quotation and bibliography. His great clinical work and experience made it unnecessary. He has been a successful teacher of medicine and surgery of students in the class room and the graduate physician in the forum.

He has been honored by his fellows as few men have been. He was elected to the presidency of the West Tennessee Medical Association in 1909. President of the staff, St. Joseph's Hospital, 1920-21; president of the Memphis and Shelby County Medical Society in 1922; president of Memphis Chapter of the American College of Surgeons in 1923 and re-elected in 1924. In all of these he served with wisdom, dignity and distinction. Inasmuch as Dr. Smythe has now been inducted into the presidency of the Tennessee State Medical Association for 1924-25, the writer who knows him well and loves him, does not hesitate to predict for him a successful and helpful tenure of office. He is entitled to and fitted for the office by every good attribute of mind and soul.

Dr. Smythe is a loyal and devoted friend, generous to a fault. He has given unsparsingly of his substance for those in need. He has been the sustaining hand that has steadied faltering ones in the struggle for daily sustenance and a better place in life. He has been an indulgent father and a devoted husband. His home relations have been fine and sweet.

He was married in his early manhood to Miss Sally Agnes Ward, daughter of the late Dr. Benjamin N. Ward, one of the most finished surgeons and scholarly men that ever lived in Mississippi. As a result of this union was born Dr. Frank Ward Smythe, his associate in the practice of surgery, Mrs. Carolyn Smythe Parks and Mrs. Sara Ruth Graham. To his children he gave every advantage, and they today are enjoying the fruits resulting from the provisions made for their welfare and for the valuable lessons he taught them in their youth.

After the death of his first wife he married Miss Beulah Mynders, daughter of the late Professor and Mrs. Seymour A. Mynders, and unto them was born a son, David Mynders Smythe. Her death occurred during the great epidemic of influenza in 1918, while Dr. Smythe was in active service in France, since which time his daughters have conducted his household.

Dr. Smythe never shirked a responsibility. Out of this kind of spirit, coupled with an indomitable energy grew a great opportunity for service. He has ever met the challenge. He has worked too hard. But the Rewarder and Giver of every good and perfect gift has reserved a place for those who have cured the sufferings of those who suffer; who have sustained those who have need of sustenance and has been a friend of those who have had need of a friend.

"Well done, good and faithful servant;

Enter into the joy of thy Lord."

Dr. Smythe has been and is my friend.

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Some of the More Important Contributions to Surgical Literature During the Past Quarter of a Century by Frank D. Smythe, Listed in Chronological Order. A review of his numerous contributions is a reliable index as to the progress that has been made in our profession during the period of his activity. Many of his contributions are somewhat in advance of the then accepted theories, and it is interesting to note that his position and his prophecies concerning the subjects treated have so often come true.

Abdominal Hysterectomy for Uterine Fibroids. Read before Charity Hospital Alumni Association of New Orleans, April 15, 1895. Re-

printed from New Orleans Medical and Surgical Journal, August, 1895.

Appendicitis: A Surgical Disease. Some Remarks on Its Characteristics. Read before the Tri-State Medical Association (Miss., Ark., Tenn.), Memphis, November, 1897. Reprinted from Memphis Medical Monthly, June, 1898.

The Importance of Antistreptococcic Serum in the Treatment of Septic Conditions. Read before the Memphis and Shelby County Medical Society in 1899. Not published.

A Brief Resume of Surgical Cases Operated at City Hospital During Three Months' Service. Read before the Tri-State Medical Association (Miss., Ark., Tenn.), November, 1899. Reprinted from the Memphis Medical Monthly, January, 1900.

Vesical Calculi in Children. Report of Four Cases Under Five Years of Age. Read before the Southern Surgical and Gynecological Association, New Orleans, La., December, 1899. Reprinted from Memphis Medical Monthly, February, 1900. Thesis submitted when making application for membership in society.

Appendicitis. Read before the Mississippi State Medical Association, Jackson, Miss., April, 1901. Published in the Transactions, 1901.

Appendicitis Mortality and the General Practitioner—A Surgeon's Viewpoint. Read before the Tri-State Medical Association (Miss., Ark., Tenn.), Memphis, November, 1902. Published in the Memphis Medical Monthly. No reprints.

Cholecystectomy, With Report of Two Cases. Read before the Mississippi State Medical Association, Vicksburg, Miss., April, 1903. Reprinted from the Transactions of the Mississippi State Medical Association, 1903.

Interstitial Hemorrhagic Cyst of the Stomach Wall—Traumatic. Read before the West Tennessee Medical and Surgical Association, Jackson, Tenn., May, 1904. Reprinted from Memphis Medical Monthly, September, 1904.

Carcinoma Cervicis Uteri. Read before the Tri-State Medical Association (Miss., Ark., Tenn.), November, 1905. Reprinted from the Memphis Medical Monthly, December, 1905.

Extirpation of the Common Carotid Internal Jugular Vein and Subclavian Artery for Carcinoma. Recovery. Read before the Memphis and Shelby County Medical Society, 1906. Published in Memphis Medical Monthly. No reprints.

Report of a Case of Torsion of the Greater Omentum, Intra-Abdominal, With Remarks. Read before the Memphis and Shelby County Medical Society. Reprinted from Surgery, Gynecology and Obstetrics, October, 1906. The first case operated upon and reported in American literature.

Lectures On Materia Medica and Therapeutics. By Frank D. Smythe, M.D. Edited by J. L. McGehee, A.B., M.D. Published by Paul &

- Douglass Co., Printers, Memphis, 1903.
- Transduodenal Choledochotomy for Stones in the Distal Extremity of the Common Duct. Read before the Tennessee State Medical Society at Memphis in 1902. Published in the Tennessee The Significance of Uterine Hemorrhage, With Report of Some Interesting Cases of Extra-Uterine Pregnancy. Read before the Memphis and Shelby County Medical Society in 1907. State Medical Journal. No reprints made.
- Elective Caesarean Section. Read before the Memphis and Shelby County Medical Society in 1907. No reprints made.
- A Contribution to the Literature on the Etiology, Pathology, Symptomology and Technique of the Operation of Supra-Vaginal Hysterectomy for Fibroid Tumors of the Uterus. Oration in Surgery delivered before the thirty-third annual meeting of the Mississippi Valley Medical Association, Columbus, Ohio, October 8-10, 1907. Reprinted from the Lancet-Clinic, October 26, 1907.
- Extra-Uterine Pregnancy. Read before Southern Surgical and Gynecological Association, New Orleans, La., December, 1907. No reprints.
- Some Reasons Why a Thorough Pelvic and General Examination is Imperatively Demanded in All Cases of Hemorrhage From the Uterus Out of Order. Read before the Clarksdale and Six Counties Medical Society, 1908, at Clarksdale, Miss. No reprints.
- A Method of Converting Difficult and Otherwise Inoperable Pelvic Cases Into Comparatively Simple and Safe Ones for Operation. Read before the Memphis and Shelby County Medical Society in 1908. No reprints.
- Porro-Caesarean Section, Occasioned by Large Multilocular Ovarian Cyst Complicating Pregnancy. Recovery of Mother and Child. Read before the Southern Surgical and Gynecological Association at St. Louis, Mo., December, 1908. Reprints from Memphis Medical Monthly.
- The Duties and Responsibilities of the Surgeon and Some of the Things the Public Has a Right to Expect of Those Assuming to Do Surgery. President's address before the West Tennessee Medical and Surgical Association at Jackson, Tenn., May, 1909. No reprints.
- Cancer of the Body of the Uterus. Read before the Memphis and Shelby County Medical Society, 1909. No reprints.
- The Clinical Side of Fibroid Tumors, With a Brief Description of the Perfected Operation for its Cure. Read before the Memphis and Shelby County Medical Society, February, 1911. No reprints.
- Report of a Case With Extreme Distension of the Urinary Bladder. Read before the Alumni Association of the Memphis Hospital Medical College, May 15, 1911. No reprints.
- Varicose Veins and Varicose Ulcers of the Leg . Portion of the Lower Extremities. Read before the Clarksdale and Six Counties Medical Society at Clarksdale, Miss., December, 1910. Published in Memphis Medical Monthly, August, 1911. No reprints.
- Excising Human Defects. Read before the Memphis and Shelby County Medical Society, 1911. No reprints.
- Pus Tubes, Pelvic Abscesses. Read before the Section on Surgery of the Southern Medical Association, Hattiesburg, Miss., November 12-14, 1911. Reprinted from the Southern Medical Journal, October, 1912.
- Report of a Case of Chorio-Epitheliomata, With Remarks on the Malignant Diseases of the Body of the Uterus. Read before the East Mississippi Eleven Counties Medical Society, by invitation, at Tupelo, Miss., August 20, 1912. Reprinted from Memphis Medical Monthly, November, 1912.
- Peritonitis Practically a Preventable Disease, Though Common and Attended With High Mortality. Read before the Tri-State Medical Association at Memphis, November, 1912. Reprinted from Memphis Medical Monthly.
- Report of a Case of Pregnancy Following the Operation of Double Ligation of Both Tubes and Division of Both Tubes Between Ligatures. Operation Was Performed for the Purpose of Guarding Against Possible Pregnancy, and Was Done at Time of Operation for Radical Cure of Cystocele. Read before the Mississippi State Medical Association at Vicksburg, Miss., April 8-10, 1913. No reprints.
- Intra-Abdominal Abscesses and General Peritonitis. Read before the Tri-State Medical Association at Memphis, November, 1913. Reprinted from Memphis Medical Monthly, December, 1913.
- Technique for Operation for Ovarian Cysts, With Special Reference to Cysts of Large Size. Read before the West Tennessee Medical Society at Union City, Tenn., May 14, 1914. Reprinted from the Memphis Medical Monthly, June, 1914.
- Data Obtained Through Correspondence With Nine Hundred General Practitioners and Surgeons Relative to the Diagnosis, Treatment and Classification of Acute Appendicitis. Read before the Tri-State Medical Association at Memphis, Tenn., November 18, 1914. Reprinted from the Memphis Medical Monthly, December, 1914.
- Dr. W. B. Rogers. Remarks Made by Dr. Frank D. Smythe Before the Memphis and Shelby County Medical Society at the Meeting to Pass Resolutions Upon the Death of Dr. W. B. Rogers, a Former President and Honored Member of the Society, January, 1915. Published in the Memphis Medical Monthly. No reprints.
- Diagnosis and Treatment of Abscess Resulting From Delay in Operating Upon Cases of Acute Appendicitis. Read before the West Tennessee

- Medical and Surgical Association, at Dyersburg, Tenn., April 20, 1915. Reprinted from the Memphis Medical Monthly, May, 1915.
- Fourteen Lectures Delivered to the Senior Class of the Memphis General Hospital Training School for Nurses on the Subject of Gynecology, Including Two Lectures on the Subject of Cancer in General and Cancer of the Uterus. A book published by the Memphis Linotype Co. for presentation to the graduating class of nurses and for a textbook on the subject of Gynecology, June, 1915.
- Points of Interest Concerning Fibroid Tumors of the Uterus. A Clinical Lecture to Members of the Memphis and Shelby County Medical Society, November 2, 1915. Reprinted from the Memphis Medical Monthly, November, 1915.
- Typhoid Perforation Peritonitis: Report of an Unusually Interesting Case. Read before the Southern Surgical and Gynecological Association at Cincinnati, Ohio, December 13-15, 1915. Reprinted from the Transactions of the Southern Surgical and Gynecological Association, 1915.
- Cancer. Read before the Board of Health Educational Campaign in Memphis, May 12, 1916. Not published.
- Uterine Hemorrhage. This paper was read before both the Mississippi State Medical Association at Greenville, Miss., and before the West Tennessee Medical and Surgical Association, both meetings held in May, 1916, the latter at Jackson, Tenn. Reprinted from the Journal of the Tennessee Medical Association, December, 1916.
- Gastric Cancer: Jejunostomy to Stomach Remnant. Read before the Southern Surgical Association at White Sulphur Springs, W. Va., December 11-13, 1916. Reprinted from the Memphis Medical Monthly, March, 1917.
- Public Address at Olive Branch, Miss., Entitled Our Duty to Our Country in This Crisis, Everybody Included. Delivered as Major in the Medical Reserve Corps of the United States Army, July 2, 1917. No reprints.
- The Physician's Duty and His Responsibility to the Government in This Crisis. Read before the Memphis and Shelby County Medical Society in July, 1917. No reprints.
- Resume of My Experience at the Rockefeller Institute. Read before the Memphis and Shelby County Medical Society, June, 1918. No reprints.
- Experiences in the Treatment of Infected Wounds in a Base Hospital in France With Dakin's Solution, Carrel Method. Read before the Mississippi State Medical Association at Hattiesburg, Miss., May 13-14, 1919. Reprinted from the Memphis Medical Monthly, July, 1919.
- A Successful Posterior Gastro-Enterostomy Seventy-six Hours Following a Raamstedt Which Failed to Relieve the Obstruction. Read before the Southern Surgical Association at New Orleans, La., December, 1919. Reprinted from the Transactions of the Southern Surgical Association, 1919.
- Exophthalmic Goitre, With Resume of the Normal Structures of the Thyroid. Read before the Memphis and Shelby County Medical Society, December, 1919. No reprints.
- The Result of Experiments Conducted in Dr. Smythe's Operating Room at St. Joseph's Hospital. Performed With the Object of Determining the Advantage, if Any, of Wearing a Mask by the Surgeon and His Assistants During Operation. Read before the West Tennessee Medical and Surgical Association at Jackson, Tenn., May, 1920. No reprints.
- Thrombosis of the Oviducal Segment of the Utero-Ovarian Artery, With Review of the Literature. Read before the Tri-State Memphis Society, Memphis, November, 1920. Reprinted from Surgery, Gynecology and Obstetrics, February, 1922. First and only case of its kind to date in literature.
- Suturing of the Musculo-Spiral Nerve Plus Transplantation of the Flexor Carpi Radialis to the Extensor Tendons for Relief of Wrist Drop Due to Severance of the Musculo-Spiral Nerve. Illustrated With Lantern Slides. Read before the Mississippi State Medical Association at Laurel, Miss., May 10-11, 1921. Reprinted from the Transactions of the Mississippi State Medical Association, 1921.
- The Proper Technique for Pan-Hysterectomy, With Lantern Slides Illustrating Some of the More Important Steps of the Operation. Read before the Memphis and Shelby County Medical Society by special request. Illustrated with lantern slides and special movie pictures. Reprinted from Memphis Medical Monthly, May, 1921.
- Dr. William Britt Burns. A Biographical Sketch of the President of the Tennessee State Medical Association, 1921-22. Published in the Journal of the Tennessee State Medical Association and reprinted September, 1921.
- Initial Experience, Clinical, With Synergistic Analgesia in a Series of Major Operations. Read before the Tri-State Medical Association, November, 1921. Never published and no reprints made.
- The Meal Ticket Doctor. Response to Toast by Dr. Frank D. Smythe, at the Annual Banquet of the Memphis and Shelby County Medical Society, Country Club, December, 1921. Published in the Memphis Medical Journal. No reprints.
- Further Experience With Synergistic Analgesia. Read before the West Tennessee Medical and Surgical Association, Jackson, Tenn., May 8, 1922. Reprinted from the Tennessee State Medical Journal.
- Address by Dr. Frank D. Smythe, President of the Memphis and Shelby County Medical Society

at a Banquet at the Gayoso Hotel Given in Honor of Drs. Willis Campbell and Marcus Haase Following Their Election as Chairmen of the Sections in Their Respective Specialties of the American Medical Association. Published in the Memphis Medical Monthly. No reprints.

Importance to the Patient of the Surgeon Making His Own Diagnosis After Personal Investigation and Physical Examination vs. the Method Too Much in Vogue at Present of the Operator, Not a Surgeon, Acting Upon the Advice or Findings of the Internist and Technicians. Read before the Gibson County Medical Association in August, 1922. Manuscript in hand. Never published.

Address at Tennessee Club Banquet Given in Honor of Dr. Battle Malone Upon Receipt of the Distinguished Service Medal Awarded Him by the Government for Meritorious Service Rendered on the Firing Line as a Surgeon During the Great World War. November 4, 1922.

Synergistic Analgesia. Read at the initial meeting of the Southern Association of Anesthetists, Chattanooga, Tenn., November 14, 1922. Reprinted in the American Journal of Surgery, July, 1923.

Editorial, The Mission of the Memphis Clinics. Published in the first issue of the Memphis Medical Journal, January, 1924.

Shockless Surgery: Crile's Contribution to Hu-

manity and to the Medical Profession, the Third Great Epoch in Medicine. A Simple and Dependable Method of Preparation of Patient for Same and Remarks. Read before Tri-State Medical Society (Texas, La., Ark.). Reprinted from the Tennessee State Medical Journal, January, 1924.

A Good Technique for Pan-Hysterectomy. Read before Dallas County Medical Society Clinic, October, 1923. Reprint the Dallas Medical Journal, February, 1924.

Chiropractic and Other Cults and Group Medicine. Toast at Gridiron banquet of the Dallas Medical Clinic, October 20, 1923. Published by request of Dallas Medical Journal. Reprinted from the Dallas Medical Journal, February, 1924.

Sterility in the Female, With Report of Cases of Sterility Dependent Upon Different Causes. Successful Treatment. Read at the Tennessee State Medical Association at Knoxville, April, 1924. To be published in the State Medical Journal.

Response to the Addresses of Welcome by the Mayor and Dr. Zemp, of Knoxville, at the Ninety-first Anniversary of the Tennessee State 7, 1924.

Speech of Acceptance of Dr. Frank D. Smythe Upon Being Ushered to the Chair as the Newly-elected President of the Tennessee State Medical Association, April 9, 1924. To be published in the State Medical Journal.

RESPONSE TO THE ADDRESSES OF WELCOME BY THE MAYOR AND DR. ZEMP AT THE NINETY-FIRST ANNIVERSARY OF THE TENNESSEE STATE MEDICAL ASSOCIATION, AT KNOXVILLE, TENNESSEE, APRIL 7, 1924.

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This is the ninety-first anniversary of the life and activities of the Tennessee State Medical Association. The increase in its membership has been gradual, but continuous, and it is the hope of the speaker that in the not distant future that every worthy doctor in the State of Tennessee will be included in its membership, as they should be included, working in the interest of the profession and in the interest of the public.

The archives of the Society are replete with evidence that the membership has kept pace with the rapid progress that has been made in our profession since the Society was organized. The officers and members of the Society have consisted of men possessed with courage and with the highest ideals, both as members of the profession and as citizens of the community in which they reside. They have been found at the front serving in behalf of every cause promulgated in the interest of public health, and in the interest of good government.

We have listened to the splendid address of His Honor, Mayor Ben Morton, welcoming us to this great city, of which he is at present the head. And we thank him for the cordial greeting extended, and for the complimentary words spoken. Also the masterly address of Dr. Zemp, on behalf of the Knox County Medical Society, supplementing the welcome extended by the Mayor, and we deeply appreciate the cordial welcome extended by the Doctor on behalf of his fellows.

It affords me much pleasure, I assure

you, to speak in behalf of the members of the Medical Profession of the great State of Tennessee, and to express our very great appreciation for the kind and complimentary words spoken concerning us, their guests. For the cordial reception exhibited, and for the extensive preparations made for the conduct of the scientific feature of the meeting, and for our enjoyment and entertainment otherwise, we thank you.

Be assured, gentlemen, that we will take advantage of the many opportunities afforded us for the entertainment and pleasure on this occasion, and profit to the fullest extent as a result of your activities and interest in us while we are your guests and within your gates; and that when we shall have performed the tasks mapped out by your worthy chairman, we will return to our respective places of abode, greatly enriched with knowledge gained by the interchange of ideas concerning professional problems, and with added interest in the welfare of our professional brethren, and an increased regard for his accomplishments, and for his real worth as a physician and as a man.

For the citizens of Knoxville, and for the Medical Profession of Knox County, individually and as a whole, the members of the State Medical Association thank you from the bottom of our hearts for this manifestation of your appreciation of our visit to your city, and wish for you one and all the richest blessings that can befall the splendid citizenship, both lay and professional, such as is your heritage and such as you possess.

# THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 420 Jackson Bldg., Nashville, Tenn.

J. F. GALLAGHER, M.D. -----Editor

R. C. DERIVAUX, M.D. -----Associate Editor

MAY, 1924

## VANDERBILT'S POLICY

The Nashville papers of May 25 carried news articles, apparently emanating from official sources, announcing additions to the Faculty of the new Medical School. These include Dr. Walter S. Leathers, well-known executive officer of the state department of health of Mississippi; Dr. Hugh J. Morgan, formerly of Nashville, but now connected with the Johns Hopkins Medical School; and Dr. C. Sidney Burwell, a graduate of the Harvard Medical School, but now also connected with Johns Hopkins. Dr. Leathers will head the Department of Public Health, and the other gentlemen will be all-time teachers in the Department of Medicine. Rumor has it that Dr. Beverly Douglass, another Nashville man and a graduate of Johns Hopkins, will have an all-time teaching position in the Department of Surgery. Dr. Douglass is now studying in Europe, and the press statement announces that the above-mentioned appointees will spend a year in Europe before taking up their duties at the new Vanderbilt Medical School.

In so far as press announcements are concerned, the one referred to above is somewhat belated as to Dr. Leathers, for the Memphis Commercial-Appeal of May 1 carried the story, together with a picture of Dr. Leathers. At an informal dinner a few weeks ago the names of Dr. Morgan and Dr. Douglass were announced. The name of Dr. Burwell will perhaps be a surprise, except to the esoteric few who have the destinies of the new Vanderbilt in their hands. And the question arises in medical circles in Nashville: Who are they?

These announcements are reminiscent

of the the manner in which the new Dean of the Medical School was made known a few years ago—that is, by the press. It is well known that the old Faculty of the Vanderbilt Medical School has not, as a whole, been apprised of any changes in their personnel, either contemplated or actually consummated, in any official manner; and it may be that the executive council of that faculty has not been consulted or advised in the matter either. True enough, the old faculty of Vanderbilt resigned as a body several years ago in order to give those at the helm unrestrained latitude of action in effecting the closure of negotiations in securing the eight-million-dollar endowment and that the members are serving purely *de facto*; but it would seem that these men, who have so unselfishly devoted their efforts to the cause of medical education in general and Vanderbilt University in particular, would be accorded more consideration than they have apparently received. And this, not only for appreciation of the services rendered the University, but for their possible usefulness in the reorganized faculty. Vanderbilt alumni will be slow to admit that the present Medical Faculty is unfit to teach medical students, though at present they may not be chasing some ultra-scientific and relatively unimportant medical phantom.

## MALPRACTICE SUITS

Malpractice suits are unquestionably on the increase. A decade or so ago they were of uncommon occurrence, and when instituted brought reflection upon the physician against whom they had been instituted. Now it is almost a truism to hear it said that if one has not been sued he is not experiencing a very large practice. However that may be, when applied individually, there is serious misgiving when a summons is served. No one but a lawyer enjoys a few days or weeks in court—and the best lawyers had rather practice their profession out of court. Who can tell—lawyers, judge, plain-

tiff or defendant—what the jury is going to decide?

It cannot be said that this increase in suits has been caused by the lowering of our professional efficiency. On the contrary, this has been increased. The passage of the workmen's compensation act has, no doubt, been a factor in increasing these suits, for that act completely eliminates the ambulance-chasing lawyer in so far as the employer is concerned; so he turns his attack against the physician.

Happily, a judgment is seldom rendered against a physician. Reasonable skill, as defined by the courts, is not understood by the average layman, and the "shyster" lawyer refuses to explain it to his misguided client. When a suit is lost by a physician, it may be accounted for on three grounds: First, the jury may not entirely comprehend the meaning of the phrase "reasonable skill." Second, the failure of a fellow practitioner, on account of personal reasons, to use every legitimate means to show the court that a patient has not been negligently or incompetently treated. Third, by the practitioner instituting treatment which he is palpably incompetent to carry out.

#### AN EXPLANATION

Just as the forms of the previous issue of the JOURNAL were ready for the press, the plant of the Rich Printing Company, printers of the JOURNAL, was seriously damaged by fire. This has caused a delay in issuing the JOURNAL, and it is hoped that both our members and advertisers will understand that the delay was unavoidable. The next issue of the JOURNAL will come from press at the usual time.

#### COUNTY SOCIETY REPORTS

Not a few county secretaries have sent to the JOURNAL copies of the proceedings of their respective county meetings for publication. In very few instances has this been done for the reason that the copy is received after the next succeeding issue of the JOURNAL has gone to press. To publish

it in the following issue would be to publish news matter that is too old to take up space. If these notices are to appear in the JOURNAL, they must be received by the fifth of the month of publication. Speed up, Mr. Secretary!

## DEATHS

Dr. J. W. Whitlock died at his home at Washington College, April 18, aged fifty-five.

Dr. Samuel McMillin died suddenly at his home at Alexandria, April 15, aged sixty-two.

Dr. L. F. Ferguson, of Gates, died in a hospital in Dyersburg, May 3, following an operation. Dr. Ferguson had been in active practice for the past fifteen years.

Dr. J. R. Puryear, of Weir, Wilson County, died May 5. He was sixty-four years of age and had just completed his forty-fourth year of active practice.

Dr. Charles M. Lane died at his home in Maryville, April 19. Dr. Lane was forty-nine years of age and had lived in Blount County all his life.

Dr. James O. Hardin died at his home in Spring Hill, Maury County, April 22. He was eighty-seven years old and an honorary member of his county society. On account of the infirmities of old age, Dr. Hardin retired from active practice several years ago.

Dr. J. E. Humphries died at his home at Conklin April 21, following a stroke of paralysis. He was fifty-six years of age and had practiced about thirty years.

Dr. E. A. Quinn, aged sixty-eight, died at his home at Cleveland, May 6, following a short illness. He had not been in active practice for several years.

Dr. F. E. Wyatt, of Yorkville, died May 14 of pernicious anemia, aged fifty-two. He graduated from the Medical Department of the University of Nashville in 1894 and had practiced in Gibson County since that time.

## MEDICAL SOCIETIES

### MEDICAL SOCIETIES

At the fifty-ninth semi-annual meeting of the Middle Tennessee Medical Association held in Columbia May 15-16, Dr. H. H. Shoulders, of Nashville, was elected president; Dr. J. C. Kelton, Lascassas, vice president; and Dr. Sam P. Bailey, of Nashville, was re-elected secretary-treasurer. Lewisburg was selected as the next place of meeting. This was one of the most successful meetings in the history of the society, over one hundred members being in attendance. The papers were of high order and the discussions were spirited. The profession of Maury County royally entertained the visitors, but not to the extent of interfering with the scientific program.

The West Tennessee Medical and Surgical Association met in Jackson on May 22-23. Dr. J. P. Baird, of Dyersburg, presided. The veteran secretary, Dr. I. A. McSwain, was unable to be present on account of illness. His son, Dr. G. R. McSwain, assistant secretary, acted in his stead. The scientific program was in keeping with the high standards set by that society, and many of the papers will appear in subsequent issues of the JOURNAL. The visiting members were entertained by the Madison County Medical Society by a banquet given at the country club. Luncheon was served all the members each day of the meeting at the Crook Sanitarium. The officers for the ensuing year are as follows: President, Dr. B. J. Gillespie, Covington; first vice president, Dr. W. W. McBride, Gleason; second vice president, Dr. G. W. Oliver, Medina; secretary, Dr. I. A. McSwain,

Paris; assistant secretary, Dr. G. R. McSwain, Paris. The next meeting will be held in Paris.

## MEDICAL NEWS AND NOTES

Dr. E. W. Mitchell, of Davidson, will be located at Crossville after June 1.

Dr. Herbert Acuff was elected May 14 president of the Knoxville Chamber of Commerce.

Dr. Fred C. McIsaac was married to Mrs. Ada Strang Denton on April 30. Both live in Chattanooga.

Dr. Marcus Haase, of Memphis, was re-elected president of the Council of Social Agencies May 8.

Dr. J. B. Naive announces the opening of his office at 300 Jackson Bldg. Dr. Naive will specialize in orthopedics.

Dr. John Paul Johnson, of Chattanooga, was married May 10 to Miss Ruth Owsley, daughter of Dr. and Mrs. J. Q. Owsley, of Nashville.

Dr. John Joseph Greer and Miss Marie Parker, both of Knoxville, were married April 22. Dr. Tom Barry, of Knoxville, was one of Dr. Greer's ushers.

Dr. W. W. Wilkerson announces the opening of his office at 202 Vendome Bldg., Nashville. His practice will be limited to eye, ear, nose and throat.

Dr. J. T. Leeper, of Lenoir City, was elected vice president of the association of surgeons of the Southern Railway at its annual meeting held in Jacksonville, Fla., April 22.

Dr. H. K. Cunningham was re-elected medical inspector of the Knoxville city schools, May 15. Dr. N. L. Hitte declined re-election and Dr. Richard McIlwaine was elected in his stead.

The Beverly Hills Tuberculosis Sanitarium, Knoxville, was formally opened May 24. The enterprise was sponsored by the Civitan Club and the money subscribed by the citizens of Knoxville.

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Dr. Irvin Simons was married April 30 to Miss Mary Burns Pugin. Both are of Nashville. Dr. Simons and his bride left immediately for a honeymoon in Europe, returning to Nashville in the fall.

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Why not eliminate the "Dr." from your name and add the correct "M.D.?" "Doctor," under the present usage, may mean Doctor of Laws, Doctor of Philosophy, Doctor of Divinity, Doctor of Dental Surgery, Doctor of Medicine. By the same token it may mean a veterinarian, a chiropractor, a druggist, a chiropodist, and various other self-styled non-de-scripts. M.D. means

Doctor of Medicine. It identifies you; that's what you are; you're proud of it; so use it!

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Dayton, Tenn., is the latest of the smaller cities of Tennessee to have its community hospital. At the meeting of the Progressive Club of that city, held April 15, announcement was made that the necessary \$40,000 to erect the proposed buildings had been subscribed. One-half of the amount was subscribed by Mr. A. P. Haggard as a memorial to his wife, now deceased, Rena Clark Haggard. The remainder was subscribed by the citizens and physicians of Rhea County. Nothing was said in the report of the above to this office of where the credit should go for the success of this enterprise; but the writer happens to know that Dr. G. W. Rappleyea, who has been mentioned before in these columns, deserves a very large measure of it.

## MISCELLANEOUS

Will Rogers, the well-known comedian and expert lariat thrower, in humorous articles, syndicated to some of the leading newspapers of the country, has the following to say apropos the government and state management of an epidemic of foot and mouth disease that has existed in some of the far western states:

You wire the State or the Federal Government that your Cow or Hog is sick, and they will send out experts from Washington and appropriate money to eradicate the Cause. You wire them that your Baby has the Diphtheria or Scarlet Fever and see what they do. All you will do is hire your own Doctor if you are able, and there will be a Flag put up on your front Gate. Where Children that don't know can still go in and perhaps be exposed to certain Death, the Government won't have Guards at every Entrance to keep you back from that Exposed House.

If your Hog has the Cholera, the whole State knows it, and everybody is assisting in Stamping it out. You can have 5 Children down with the Infantile Paralysis, more deadly 10 times over than any Foot and Mouth disease, and see how many Doctors they send out from Washington to help you.

I heard Dr. Copeland, now Senator from New York, say that there was more Money spent on Hogs' sickness by State and Federal Governments than there is on Children, when one child's life is worth all the Hogs and Cows that ever had a Disease. If you want the Government to help you, don't tell them it is any Human sickness. Tell them it is Boll Weevil or Chinch Bugs, and they will come running, because they have big appropriations and men paid for that.

How many Children die every day from some contagious disease, that would be living if we exercised the same vigilance over a Child that we do over a Cow? Hundreds of People are passing through the adjoining States to California every day who have

been exposed to some Contagious Disease, and nothing is said of Fumigating them; but if you try to come through and haven't been any nearer a Cow than a Can of Condensed Milk, why, you must be Fumigated.

I fully believe that every sane Precaution that is being exercised is necessary, for it is a very serious thing, but while we are all thinking of it, why can't we get the Government to at least do for a Child's protection what they do for a Cow or a Hog?

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The following news item in the Memphis Commercial-Appeal should be of interest to the profession of the state, especially in view of the action taken by the House of Delegates at the Knoxville meeting. It will be recalled that the House concurred in the recommendation of the secretary that a committee be appointed to investigate the need and feasibility of providing graduate medical instruction in rural communities.

The April surgical and medical clinic of the Memphis and Shelby County Medical Association, established recently to provide post-graduate work for physicians in the surrounding territory, will be held Wednesday at the Baptist Hospital.

The morning clinic will be devoted to various phases of surgery, and the afternoon clinic will deal with medicine. In the evening the session will be the pathological congress and will be held at the University of Tennessee.

The Baptist Hospital has set aside one day for this work, and the hospital furnishes every convenience for the clinic and entertains the guests at lunch. Physicians are invited to attend.

The program follows:

— 9:00 A.M.

Dr. R. L. Sanders, Duodenal Ulcer.

Dr. Frank W. Smythe, Tumor of Submaxillary Gland and Ovarian Cyst.

Dr. O. S. McCown, Urological Surgery (Nephrectomy).

Dr. Louis Levy, Local Tonsils.

10:30 A.M.

Dr. W. B. Burns, Appendix.

Dr. W. L. Williamson, Pelvic General Surgery (Cystoma of Ovary).

Dr. E. J. Lipscomb, Bone Graft.

Dr. J. B. Blue, Cataract Extraction.

Dr. J. J. Shea, Nose and Throat (Submucous Resection).

2:00 P.M.

X-ray Show Clinic—Interesting films,

clinical data. Drs. L. H. Chapman, H. P. Cowley and W. R. Bethea.

3:00 P.M.

Medical Clinic—Case records or patients, or both. Dr. W. T. Swink, assisted by Dr. C. H. Sanford. Subject, Nephritis.

8:00 P.M.

The regular weekly clinical-pathological conference meeting of the University of Tennessee, Lindsley Hall. Subject of evening, Syphilitic Mesortitis with Aneurysm and Its Complications.

## BOOKS RECEIVED

### NEW AND NONOFFICIAL REMEDIES, 1924.

Containing descriptions of articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1923. Cloth. Price, postpaid, \$1.50. Pp. 422+XXXIX. Chicago: American Medical Association, 1924.

Every physician is continually bombarded with literature, scientific and otherwise, concerning the newer remedies. He has neither the time nor the opportunity to investigate all even of the more promising preparations, and obviously he cannot try them upon his patients without investigation. He must know the composition of the article, must know that the claims under which it is marketed are true; in other words, he must have some critical statement of the actions, uses and dosage as well as of the chemical and physical nature of the product.

This need of the physician is met in *New and Nonofficial Remedies*, which is the official publication through which the Council on Pharmacy and Chemistry annually presents to the American medical profession disinterested, critical information about the proprietary preparations which the Council deems worthy of recognition. In addition to the description of these proprietary preparations, the book treats those nonofficial remedies which, in the opinion of the Council, are worthy of consideration.

As the book is designed for ready reference, each preparation is classified, and each classification is preceded by a general and critical discussion of that group. These articles are written by those who may speak with authority on the separate subjects, and are a compilation of the best accepted opinions of today. Thus there is a general article on lactic acid producing organisms in which the newly accepted *Bacillus acidophilus* preparations are discussed in connection with other accepted sour or fermented milk preparations. The animal organ preparations, the biologic preparations, the arsenic preparations, and so on, are discussed in such a manner as to make the accepted facts concerning each group readily available.

A glance at the preface of the new volume will show that the book has been extensively revised. In fact, each new edition of *New and Nonofficial Remedies* is essentially a newly written book, fully indexed.

Physicians who wish to know why a given proprietary is not described in *New and Nonofficial Remedies* will find the References to Proprietary and Unofficial Articles not found in N. N. R. of much value. In this chapter (in the back of the book), there are references to published articles dealing with preparations which have not been accepted.

*New and Nonofficial Remedies* is a book that a physician who prescribes drugs cannot afford to be without. The book contains information about medicinal products which cannot be found in any other publication.

The book will be sent postpaid by the American Medical Association, 535 North Dearborn Street, Chicago, on receipt of one dollar and fifty cents.

**METHODS IN MEDICINE.** The Manual of the Medical Service of George Dock, M.D., Ph.D., formerly Professor of Medicine, Washington University School of Medicine; formerly Physician-in-Chief Robert A. Barns Hospital, St. Louis. By George R. Herrmann, M.D., Ph.D., Instructor in Medicine, University of Michigan; formerly House Officer, Peter Bent Brigham Hospital, Boston; former Assistant in Medicine, Washington University; formerly Resident Physician Robt. A. Barns Hospital, St. Louis. Illustrated. Pages 521. Cloth. Price, \$6.50. St. Louis: C. V. Mosby Co., 1924.

Dr. Herrmann has made available to physicians and hospitals at large, a manual representing a system which has proved successful in the Medical Service of Professor George Dock at the Barns Hospital, St. Louis. Every large and well organized hospital has an outline of rules and suggestions for the members of the house staff, but few approach this one in completeness.

The first part deals with the duties of the house staff and the details of the routine requirements for each type of case. The duties of the residents and internes are very elaborate and are only applicable to a large teaching hospital; however, there are many valuable suggestions to any one organizing a hospital service. The second part gives the procedures for the complete investigation of different diseases. The third and fourth parts deal with diets, a thing so often neglected both in and out of hospitals, and the care of patients. Of particular interest is the list of twenty drugs which Dr. Dock has found in practice to be of most value. The last part is a collection of charts used at Barns Hospital.

Hospitals can ill afford not to place a manual of this type in the hands of the house staff to guide them in the investigation and care of the patients in their institution. S. P. B.

**ABT'S PEDIATRICS.** By 150 specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Now ready. Vol. III, containing 1,051 pages, with 223 illustrations. Philadelphia and London: W. B. Saunders Co., 1924. Cloth. \$10.00 per volume. Sold by subscription.

*Abt's Pediatrics* is being issued a volume at a time. The third volume deals with the digestive

and respiratory diseases of infancy and early life. The work is in monograph form, and the various sections have been written by men well known in the fields they discuss.

In any system of medicine some repetition is unavoidable. However, this is compensated by the wealth of material that is found in a system such as this, that would not be available except through very extensive journal reading. Subjects barely mentioned in the ordinary text-book on pediatrics are here described fully. Thus the physiology and bacteriology of the gastro-intestinal tract and respiratory system, the "Wern system of nutrition," milk idiosyncrasy, orthodontia, bronchoscopy, pelliosis and sinusitis are treated at length.

That portion of the volume devoted to the surgery of the gastro-intestinal tract in children is worthy of especial commendation. The subjects

of pyloric stenosis, abdominal contusions, peritonitis, appendicitis, intestinal obstruction and hernia are splendidly handled.

The nutritional diseases of infancy are discussed on a basis of Finkelstein's classification. The subject of breast feeding was well covered in another volume, but its importance justifies some repetition here. There are special articles on celiac disease and gastro-intestinal disturbances in older children.

Too little attention is devoted to the treatment of pneumonia. There is some repetition on foreign bodies in the lungs. The third volume is well illustrated, especially the subjects of hare-lip, cleft-palate, and malocclusions, and maintains the high standard predicted for this system of pediatrics with the issuing of Vol. 1 and Vol. 2.

R. H. P.

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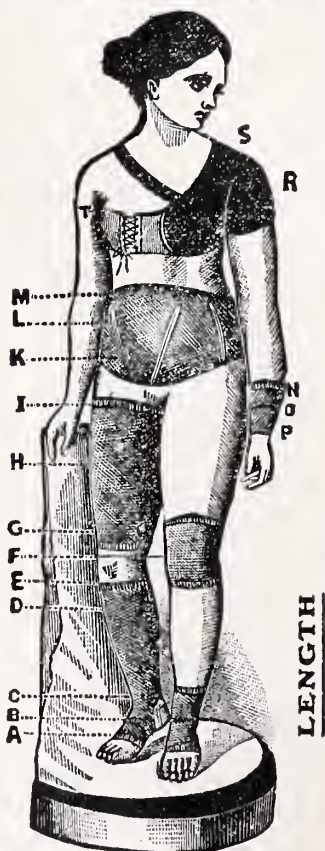
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### VENTRAL TUMORS OF THE SACRUM\*

H. W. HUNDLING, M.D., MEMPHIS

THE tumors under consideration arise from the hollow of the sacrum, have a definite capsule, are usually attached to the periosteum, and tend to erode the bone. Middeldorpf first associated them with the post-anal gut; they are often spoken of as Middeldorpf tumors. Many infants affected die during birth or in the first year of life, and the condition is not recognized. Births are usually normal. The tumors as a rule are about eight centimeters in diameter; however, they may become very large and obstruct delivery. It is believed that females are more often affected than males.

In collecting a series of cases of sacral tumors in the new-born, Calbet found them to occur once in 34,582 births. They do not, however, occur in children alone, for a considerable number have been reported in adults. The rarer types, such as dermoids and teratomata, are especially prone to develop in the sacro-coccygeal region. In our experience the gliomata have been common. Giant cell tumors, sarcomata and carcinomata are not rare. Myomata occur occasionally, while fibromata, chondromata, osteomata, lipomata, and chordomata have been seen. Angliomata, epitheli-

omata and endotheliomata have been observed. The other most common types are dermoid cysts, (pilo-nidal cysts and sinuses), mixed tumors, fetal inclusions, and abnormally persisting or hypertrophic caudal appendages forming either a pseudo-tail (the result of hypertrophy of the caudal filament), or a true tail (the result of bony overgrowth or prolongation of the sacrum). Hermann and Tourneux have made a careful study of sacral tumors, and confirm these findings.

In the evolution of the embryo, many developmental errors may arise in the sacro-coccygeal region. It is here that the caudal termination of the primitive streak should most accurately attain its evolution and involution, the neurenteric canal should develop and disappear, the anus should complete the intestinal tube, the posterior fissure properly close, the coccyx and sacrum develop, and the inferior extremities symmetrically adapt themselves to the trunk. Moreover, within a few millimeters of the area under consideration the complicated evolution of the genito-urinary tract progresses.

#### ORIGIN AND TYPES OF TUMORS.

Sacro-coccygeal tumors are composed of many varieties of tissue, and for this reason Rindfleisch has named them "histo-

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

logical potpourri." Certain authors assert that the majority of the growths are primarily cystic, but a smaller number of solid tumors have also been reported.

Various types of structures may be found in these growths, such as fetal nerve tissue with recognizable ganglion cells, central canal and choroid plexus formations, epidermis and dermoid cysts, optic vesicles, rudimentary bronchial segments, intestines, pancreas, liver, suprerenials, fibrous connective tissue, mucosa, smooth and striated muscle, cartilage and bone. Chiari reports a case in which there were found two maxillae with alveoli and lips, and one hand with phalanges, muscles and nails.

The variety of tissues in these tumors naturally arouses curiosity regarding their origin. Broders studied a number of these tumors and is of the opinion that many of them are ependymal cell gliomata, closely related to carcinoma, since they develop from ependymal cells, which really are slightly modified epithelial cells. These tumors are soft and gelatinous, closely resembling myxomata or colloid carcinomata. On microscopic examination they closely resemble carcinoma of the breast, and some present areas having an alveolar arrangement similar to that of the ependymal cells in the cord.

Many of the tumors in which ganglion cells or neuroglia are present were formerly called neuro-epitheliomata, and of such a considerable number have been reported in the literature. In addition to the rests of the fetal neural layers, remnants of the notochord are sometimes considered a source of origin for these growths. Some of the neo-plasms have been diagnosed chordoma, and are considered very malignant. Hermann and Tourneux attribute the presence of nerve tissue interspersed between the epithelial and the connective tissue elements to a persistence of the medullary coccygeal vestige; Borst and Mallory are of the opinion that these vestiges are largely responsible for dermoid structures in the region of the sacrum and coccyx.

Law reported a case diagnosed malignant neuro-blastoma, which might be considered at this time. The patient, a girl of sixteen, was pregnant and at full term. After twenty-four hours of labor the head had not engaged. Examination revealed a hard, fixed, tense, non-elastic mass in the pelvis, and Caesarian section was performed. Because of firm fixation posteriorly, it was necessary to perform a complete hysterectomy, at which time the sacral tumor was recognized. It was removed later through a posterior incision. A year afterward the girl died of a local recurrence.

Many authors have considered the post-anal gut as a rather common source of sacral tumors. Middeldorpf was the first to describe such a case, that of a girl six years old who had a tumor in the region of the anus. With gradual enlargement of the tumor a sinus discharging fecal-like material developed. A soft mass, which was not attached to the rectum, could be felt and was later removed through a Kraske incision. On examination the growth was found to be composed of fat and connective tissue, with distinct layers of mucosa and characteristic mucous glands, sub-mucosa, circular and longitudinal muscles, and many solitary follicles, but no serosa. The tumor probably should be classified as a teratoma, (the structure resembling a normal organ, the bowel), and might be considered a "parasitic fetus." Certain authors have questioned whether this might not have been a persistent post-anal gut segment, resembling such abnormalities as Meckel's diverticula, esophageal diverticula, and bronchial fistulas.

The writers who believe in the mono-germinal theory hold that these tumors arise from proliferations of the medullary canal, the neurenteric canal, and the hind-gut, in association with ectodermal and mesodermal inclusions, while supporters of the bi-germinal theory believe that the tumors representing incomplete monstrosities, or twins, are due to the early existence in the fetus, of a fecundated ovum, a suppressed fetus, so called.

One very interesting case was reported by Frank, in which a woman of twenty-three, at the ninth month of pregnancy, was rapidly delivered of the head and shoulders of her child, with the escape of a large amount of brown watery fluid. The delivery was completed without incident. Examination of the child revealed a circumscribed, bluish, skin-covered tumor, with several fistulae in the sacral region, discharging yellowish-white viscid fluid. Recovery followed the removal of this tumor, which was composed of cysts filled with brownish yellow fluid, and areas resembling liver, adrenal and salivary glands, with a thin section of skin along the margins. A diagnosis was made of a true teratoma. In the growth were found structures resembling the choroid plexus and various other parts of the brain, and in pairs, cornea, sclera, ciliary body, retina and choroidal epithelium. Skin, voluntary muscle, a small kidney, an adrenal with chromaffin, pharyngeal clefts, some intestinal tissue, liver, pancreas, salivary glands, heart and blood vessels were also observed. There was no evidence of the formation of lungs or genitalia.

It is likely that the carcinomata arising in the sacro-coccygeal region came from the post-anal gut tissue, while the nervous tissue tumors arise from the neural tract. Some of these growths have proved to be anterior sacral meningoceles. In several such instances death resulted following the removal of clear fluid.

#### PATHOLOGY.

Tumors ventral to the sacrum are usually larger than those on the dorsum. As a rule they are smooth and sharply defined. They tend to erode the bone, and may attain large dimensions, extending upward behind the pelvic peritoneum and causing intra-pelvic pressure symptoms. As a rule they never extend upward above the posterior-superior margin of the gluteal muscles. The larger ones seem to develop forward toward the pelvis and downward between the legs, displacing the genitals and anus downward and forward. In the

growth forward they press the uterus upward without spreading the broad ligaments. It is possible that the tumor may extend deeply between the vertebrae and cause paraplegia by pressure on the cord.

Early writers believe that malignancy was the rule, but metastasis was relatively uncommon. Broders does not believe that metastasis occurs, but that death is caused by infiltration. The prognosis is bad because of the location, since the tumors may extend along the cord and cause death by pressure. The growths near the skin are usually dermoids, while those higher in the pelvis are considered more complex and rare.

Attention has been called to the danger resulting from injury and infection if patients are not operated on. Sudden enlargement may be due to infection or to neoplastic activity. Because of the proximity of the meninges, infection especially must be guarded against.

#### SYMPTOMS.

Constipation is often the only symptom. Pain in the sacral region and down the thighs is fairly common. The pressure in the pelvis may be the first indication of a pathologic change. Often there are no symptoms and a difficult labor may first lead one to suspect the presence of a tumor. The earliest indication of a growth may be suppuration with sudden drainage into the rectum, bladder, or vagina, or even into the perineum.

#### DIAGNOSIS.

In cases in which spina-bifida is associated, it is sometimes difficult to decide clinically between a spina-bifida sac, meningocele, myelocele, myelo-meningocele, hydro-rachis and dermoid. Differentiation must also be made from fibroids, ovarian cysts, intraligamentous cysts, ischio-rectal abscesses, congenital dorso-sacral hernias, containing bowel and bladder, lymphangiomata, angiosarcomata or peritheliomata and simple lipomata. The roentgen ray is of some aid in clearing up the diagnosis of spina-bifida.

## TREATMENT.

Most authors advise removal of the growth, if possible. Murphy advised complete dissection and removal, because he believed the structures to be embryonic in origin (sometimes containing mammary and testicular tissue) and potentially malignant. According to Scheuermann, the operation is more successful after the first year of life. For a time these cases were considered unfavorable for surgery because of the difficulty of approach by the anterior incision, and the danger of hemorrhage. Since the adoption of the Kraske technic of opening the pelvis posteriorly by resection of the coccyx and lower sacrum, much more satisfactory results have been obtained. The approach is easy and provides freedom from disturbance from other organs. According to W. J. Mayo, early surgical intervention is the proper form of treatment. He recommends the posterior approach with rapid removal of the growth, which should be thoroughly scraped away. Hot packs are usually required to check the hemorrhage, and the wound is then packed with gauze. Extensive radium radiation is applied after the operation.

Coley reported favorable results by the use of the mixed toxins of erysipelas and bacillus prodigiosus. In successful cases the effect is usually promptly noticeable as evidenced by the fact that the tumor becomes smaller, is more easily movable, and less vascular.

In a case reported by Massey, a young woman aged 26, with a fibro-sarcoma of the ventral surface of the sacrum was treated with massive disseminations of mercuric ions with a strong electric current and the tumor disappeared.

## REPORT OF CASES.

In reviewing the surgical records of the Mayo Clinic, I was able to find only nineteen proved cases of ventral sacral tumors. Records of eight other cases were found which were probably of this type, but in which the diagnosis was not confirmed because of non-surgical treatment. A resume of the nineteen cases follows.

## SUMMARY.

Ventral tumors of the sacrum, (so-called Middeldorpf tumors) are definitely encapsulated, usually attached to the periosteum, and tend to erode the bone. The greatest pressure is exerted on the neural and not on the rectal side.

Remains of the lower neural canal and post-anal gut appear to be the source of many of the ventral tumors.

All the tissues of the body may be represented in the growths. Ventral sacral tumors seldom metastasize, but usually cause death by infiltration.

The blood picture is practically always normal and urinalysis rarely shows abnormal findings. Systemic reaction is mild.

Constipation and pain resembling sciatica are often the only symptoms.

Roentgen-ray findings are practically always negative.

Treatment consists of complete removal of the tumor, followed by extensive radium radiation.

Five patients with ependymal cell gliomata were operated on. The average age was forty-six years. One patient was perfectly well ten years after operation, and one was improved nineteen months after, but complained of disturbance of function of the bladder and bowels. One died of recurrence nine years after removal of the growth. An exploration was made in one case, which proved to be inoperable, and the patient died fourteen months later of intestinal obstruction. The fifth patient had a recurrence two years after operation, but without discomfort.

Dermoids were removed in four instances. The average age of these patients was thirty years. Post-operative data were obtained in three cases. One patient was well one year after operation, and another eight years after. One had a recurrence five years after the removal of the tumor.

There were three patients with foreign body giant cell tumors. The average age of these patients was forty years. One was apparently well fifteen months after removal of the growth. Almost complete

| Age | Sex | Chief Complaint   | Duration  | Operation  | Diagnosis   | Post-operative Treatment                                    | Results   |
|-----|-----|---|-----------|--|---|---|---|
| 47  | M   | Pain in rectum; constipation; urinary retention; pains down legs  | 2½ years  | Jelly-like tumor removed from hollow of sacrum   | Ependymal cell glioma                             | X-ray, radium   | Fair health 19 months later                                       |
| 68  | M   | Urinary difficulty; nocturia; constipation; sciatic pains   | 1 month   | Inoperable growth in hollow of sacrum  | Ependymal cell glioma                             | None  | Died 14 months later from intestinal obstruction                  |
| 33  | M   | Constipation; pain in sacral region   | 2½ years  | Tumor removed from periosteum of sacrum  | Ependymal cell glioma                             | Radium, Coley's serum                                       | Died 8½ years later from recurrence                               |
| 44  | M   | Recurrent tumor lower back (fatty tumor removed twice previously)   | 2 years   | Tumor removed from periosteum of sacrum  | Ependymal cell glioma                             | None  | Well 9 years later  |
| 38  | M   | Pain after sitting; constipation  | 3 months  | Soft honey-combed tumor removed from hollow of sacrum  | Ependymal cell glioma                             | X-ray, radium, Coley's serum                                | Recurrence of tumor 6 months later without discomfort             |
| 67  | F   | Discomfort from small tumor at end of spine; aching in hips and thighs  | 30 years  | Double compartment tumor removed from hollow of sacrum                                       | Post-anal dermoid                                 | None  | Recurrence 5 years later without discomfort                       |
| 3   | F   | Lump over lower spine, lately increasing in size  | 3 years   | Double compartment cystic mass removed from region of coccyx.                                | Post-anal dermoid                                 | None  | No answer to letter of inquiry                                    |
| 19  | F   | Born with lump on lower spine, drained several times; still draining  | 5 years   | Multilocular cyst lying against sacrum   | Dermoid cyst                                      | None  | Well 8 years later  |
| 32  | F   | Pain in lumbar spine, especially on stooping; headaches   | 3 years   | Cystic mass removed from behind rectum   | Dermoid cyst                                      | None  | Well 8 months later   |
| 36  | F   | Pain in back and legs; weakness   | 14 months | Soft friable mass scraped from hollow of sacrum  | Foreign-body giant cell tumor                     | Radium  | Well except for slight drainage from wound 9 months later         |
| 57  | F   | Partial intestinal obstruction; pains in sacral region; slight urinary incontinence                           | 5 months  | Soft tissue scraped from hollow of sacrum  | Foreign-body giant cell tumor                     | X-ray, Coley's serum  | Fairly well; no recurrence 10 years later                         |
| 27  | F   | Stiff back; soreness lower spine; tingling in legs; pain in lower abdomen                                     | 10 months | Encapsulated growth removed from hollow of sacrum  | Foreign-body giant cell tumor                     | Transfusion   | Died shortly after operation (hemorrhage)                         |
| 64  | M   | Sharp shooting pains in lower abdomen and rectum; constipation; partial urinary retention                     | 10 years  | Hard mass removed from behind rectum   | Myosarcoma  | X-ray, radium   | Died 11 months later from recurrence                              |
| 19  | F   | Painful periods; pain in lower back, left hip and legs  | 5 months  | Soft encapsulated freely bleeding mass removed from hollow of sacrum                         | Sarcoma with foreign-body giant cells and mitoses | X-ray, radium   | Died 14 months later, probably from recurrence                    |
| 40  | F   | Painful coccyx and thighs since a fall, worse with pregnancy when tumor was found                             | 18 months | Flattened vascular tumor eroding the sacrum was removed                                      | Adeno-carcinoma                                   | Radium  | Pain in back, scoliosis and kyphosis. No recurrence 2 years later |
| 49  | F   | Rectal abscesses, fistulas and hemorrhoids  | 20 years  | Large tumor with two sinuses removed from hollow of sacrum                                   | Colloid carcinoma                                 | X-ray, radium   | Apparently well 3 years later                                     |
| 37  | M   | Injury to back 12 years ago; pain lower back and down legs  | 5 years   | Solid tumor removed from hollow of sacrum, following suprapubic drainage for acute retention | Myoma   | X-ray, radium; inoperable recurrence 2½ years later; radium | Well 3 years after operation                                      |
| 56  | M   | Constant ache over lower back (pelvis explored for tumor)   | 4 months  | Hard tumor removed from behind rectum  | Cellular myoma                                    | None  | Died from recurrence 1 year later                                 |
| 34  | M   | Injury to sacrum 15 years previously; dull pain over sacrum and down legs (explored and diagnosed malignancy) | 1½ years  | Sacrum largely destroyed, exposing nerve plexus; inoperable                                  | Basal cell epithelioma                            | X-ray, radium   | No answer to letter of inquiry.                                   |

recovery was reported by another ten years later. A third patient died following operation.

Carcinomata were found in two instances. One patient, aged forty years, had an adeno-carcinoma, and was practically well two years after operation. The other, aged forty-nine years, had a colloid carcinoma and was markedly improved three years following its removal.

Myomata were removed in two instances. One patient aged thirty-seven years was improved three years after operation, and another, aged fifty-six years, died from recurrence one year after operation.

One patient, aged sixty-four years, with a myosarcoma, died from recurrence one year after operation.

One patient, aged nineteen years, died from recurrence fifteen months after the removal of a sarcoma. The growth was composed of foreign body giant cells with mitoses.

An inoperable basal cell epithelioma was found in one instance.

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#### DISCUSSION

DR. IRVIN ABELL, Louisville, Ky.: My experience with these tumors, like the rest of you, has been rather slight. It embraces a total, I think, of five cases, all in adults. I have not encountered any in children. The pathology, histogenesis and theories as to etiology have been gone over pretty thoroughly by the essayist. As he has said, the peculiar feature I have observed in my work is that the tumors that microscopically are apparently benign have given us the greatest amount of trouble in the way of recurrence. In one case the pathologist reported benign, the patient came back a year later with a recurrence, and again the same pathologist was unable to find evidence of malignancy. Yet that woman died with malignancy in the abdomen.

The type of approach, I think, is that described by the essayist. The resection of the coccyx gives one good access to the tumor. The removal of the posterior rectal wall has been necessary in two of my cases, but careful closure prevented any trouble. The operation is not easy, the microscopic classification is not accurate, and the future of the patient under these circumstances is of necessity an uncertain one.

DR. H. W. HUNDLING, Memphis (closing): There is just one point that I probably did not stress sufficiently, namely, that occasionally on exploring these tumors they will prove to be meningoceles. In one case not reported in this group, a meningocele was removed intact. Another patient, a child of three, was seen with a small projection from the rectum and a small fecal fistula just above the left labium. At operation the projecting tumor proved to be connected with a meningocele and the child died five days later from meningitis. It is well to remember that ventral sacral tumors may be of this type and that the outcome occasionally will be fatal.

## SUGGESTIONS\*

By LOUIS LEVY, M.D., F.A.C.S., MEMPHIS

I WISH in opening this meeting to express to you my grateful appreciation of the honor bestowed on me in selecting me your chairman of this section, and as chairman, my address to this section offers an opportunity to bring before you suggestions for the good of our branch of medicine and I hope that each of you will be interested enough to see that they are carried out.

### BETTER TRAINED SPECIALISTS.

It seems to me we are beginning to get away from the true ideals or meaning of what a specialist is or should be. From personal observations I feel this is due in a great measure to the fact that the proper attention and stress is not given to the final education of the men who intend specializing. How often do we now see appearing notices where Dr. So and So has gone away for a six weeks or two months course in our branch of medicine and then returns as a full fledged specialist. Is it any wonder that the laity are losing faith in medicine and specialists and are turning to the many different healing arts that have sprung up, when we are giving them cause to question the education of men trained in medicine as general practitioners or specialists.

In our branch it is most important that at least one year be spent in study and at least one-half of this time be devoted to the study of fundamental sciences, the other half if possible in a clinic under the supervision of trained specialists.

I would, however, urge upon the younger men who decide to specialize, nothing short of hospital training as an interne in our special hospitals, where they must stay from eighteen months to three years, de-

pending upon the courses wanted. A study of the report of the committee on graduate training in Oto-Laryngology by the Secretary, Dr. George E. Shambaugh, will aid you greatly in giving the proper advice to the man wishing to enter our branch.

I feel when we insist upon such training and recognize in our special societies men who have worked along these lines we will have less poorly fitted specialists and at the same time will eliminate those schools or hospitals which now advocate and give courses far inadequate. I do not mean for you to misunderstand my attitude regarding the many wonderful short courses given for the already trained specialist, but to the contrary they should be encouraged by our attendance. This training would also in time cause the public to realize that men in our branch are properly trained and can be relied upon, so that the public would soon question work done in our branch by so called specialists in other departments of medicine. In our city today many men trained as pediatricians have entered the field of oto-laryngology claiming that they are competent to take care of the work. Need I but call your attention to the fact that a true specialist in pediatrics is trained as an internist and not as a surgeon. The author of this paper is not trying to dictate the policy of any physician, but is pleading for a better training and understanding between the specialists in his own branch, as well as the other branches of medicine and when this is brought about it will mean better care for the patient, which after all should be the ideal for which we strive.

### LYE LEGISLATION.

Recently, after years of work, Dr. Chevalier Jackson had the pleasure of seeing successfully passed before the Pennsylvania

\*Chairman's address, Eye, Ear, Nose and Throat Section, Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

State Legislature and made a law a bill providing for the proper labeling and handling of lye and other caustics. Through the efforts of Dr. H. Marshall Taylor, of Jacksonville, Fla., a similar bill was recently passed by the Florida Legislature and became a law.

No doubt many of you have already had the unpleasant task of treating small children who have been unfortunate enough to swallow lye. In our city we have quite a few. As it will soon be time for our own Legislature to be elected for the coming session, I wish to bring to your attention the serious need of an act similar to the one passed elsewhere and which is as follows:

Section 1. That on after \_\_\_\_\_, it shall be unlawful for any person or copartnership or corporation to sell at wholesale or retail within this State any caustic acids or caustic alkalies or preparations "containing such acids or alkalies" intended for household use, including preparations ordinarily described as or called "Lye," without affixing to the bottle, box, vessel, sack or package containing the same a label printed or plainly written containing the name of the article, the name and place of business of the manufacturer, seller or distributor of such household acids, alkalies or preparations thereof, and in addition the word "Poison," which shall conspicuously appear thereon in red capital letters not less than twenty-four point size or which shall be affixed thereto as a sticker conspicuously placed.

Section 2. The word "Caustic" shall within the intent and purpose of this act be construed to mean any "acids or alkalies in liquid or powdered form or preparations thereof, or containing free or chemically, unneutralized hydrochloric acid in a concentration of ten (10) per centum, or sulphuric acid in a concentration of ten (10) per centum, or nitric acid in a concentration of five (5) per centum, or carbolic acid (Phenol) in a concentration of five (5) per centum, or oxalic acid in a concentration of ten (10) per centum, or acetic acid in a concentration of twenty

(20) per centum, or hypochlorous acid (calax Chlorinata bleaching powder or chloride of lime) in a concentration of one hundred (100) per centum, or potassium hydrate (caustic potash Vienna paste pearlash potassa carbonas) in a concentration of ten (10) per centum, or sodium hydrate caustic soda (concentrated lye) in a concentration of twenty (20) per centum, or silver nitrate (Lunar caustic) in a concentration of five (5) per centum.

Section 3. Any person or copartnership or corporation violating section one of this act is guilty of a misdemeanor, and upon conviction shall be sentenced to pay a fine of not more than one hundred dollars and the costs of prosecution, or imprisonment of not more than ninety days.

Section 4. This act shall take effect upon its passage and approval by the Governor."

I feel sure that the men who will become your next law making organization, when properly convinced regarding the need of such a law, will gladly lend us their assistance in putting it across.

At the San Francisco meeting of the A. M. A. in June, 1923, the following resolution was offered by Dr. Burt Shurly, a delegate from the section on Laryngology, Otology and Rhinology and was adopted by the House of Delegates:

"Whereas, The domestic use of concentrated lye and other caustic alkalies and of corrosive acids, in ignorance of their dangerous properties and treatment in case of accident, is a not infrequent cause of death and of prolonged, distressing and incurable disability, particularly among children; and

"Whereas, In the judgment of this house the adoption of suitable methods of packing, labeling and distributing such substances would materially diminish the danger; and

"Whereas, Efforts to bring about the adoption of such methods by the voluntary action of manufacturers and distributors have given no prospect of success, be it

"Resolved, That it is the sense of the House of Delegates of the American Medi-

cal Association, in convention assembled, that in the interest of public health and safety, the packing, labeling and other distribution of concentrated lye and of other caustic alkalies and of corrosive acids should be regulated by law; and be it

“Resolved further, That the Board of Trustees be instructed to take such action as may be necessary to procure the enactment of such federal and state laws as may be necessary to effect such regulation.”

This measure does not work a hardship on the lye manufacturer nor upon the wholesale or retail grocer. It does, however, take away all option from the seller to label these poisons as he sees fit, which is as it should be, when one considers that the druggist is compelled by law to attach proper poison labels to corrosive poisons he sells. So that in urging the passing of an act to regulate the sale of such poisons we are not only complying with the A. M. A. resolution, but above all continuing the ideals of the practice of medicine by helping mankind.

#### CARE OF THE DEAF.

I wish to also call your attention to one of the greatest needs in our specialty at present, and that is, in realizing the care that is needed for the deaf. Little at present is being done and only a few men are working toward this end. Absolute deafness does not incapacitate the individual sufferer as much as blindness does and if

the sufferer is a young child, with proper early training this child can be made into a useful citizen, for there are many trades closed to the blind in which the properly trained deaf would have no difficulty whatever in competing with their normal neighbors. They should be trained for these trades and at the same time lip reading should be taught, which, as a rule, is not difficult.

We are prone, however, to forget these poor individuals, for their needs are not brought forward like the blind or deformed. Again, the children are too often shielded at home, and it is our duty to impress upon the parents the need of an early education in these children. In the public schools today we find many backward children, due not to the lack of brains but to physical defects, among which is deafness of various degrees, and the pride of the child keeping back any complaint about this condition. Proper local legislation and teachers for these backward children would no doubt help to properly educate and make out of them useful citizens.

In closing, let me hope that the suggestions above have already caused some thought on your part and before the general meeting is over you will urge that the House of Delegates go on record for the Tennessee State Medical Association, requesting the passage of the necessary lye legislation.

## SURGICAL PATHOLOGY OF THE GALL BLADDER AND DUCTS\*

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By W. A. BRYAN, M.D., F.A.C.S., NASHVILLE

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**D**OGMATIC statements regarding the surgical treatment of cholecystitis, gallstones, obstructions not due to stones, and lesions nigh and remote resulting indirectly or directly from disease in the gall bladder and bile passages are much more easily made than they can be lived up to, as any surgeon having large experience knows only too well. For circumstances may exist which enforce deviation from the hardest rule or may be expected as a reasonable possibility in such form that compliance with the rule in the first instance would render the case incurable by this or any other subsequent operation.

It seems, therefore, a justifiable premise for this discussion that surgery of the biliary organs cannot be undertaken with fixed conception as to what will be done and what not, but with the view that the case when opened will be studied and a conclusion reached as the study proceeds as to what course offers the surest ultimate relief to the patient, with a stoical disregard for the opinion of some man far away who has laid down the law that all gall bladders of this and this other type should be removed, while confidently assuring us that some other may be safely left. The surgeon doing the operation is the supreme and final judge and his training and knowledge must equal the exigencies presenting.

The study of gall bladder pathology may be fairly estimated to be a study of cholecystitis, if we are willing to omit a few very rare conditions, most of which never bring the patient to either physician or surgeon.

Cholecystitis was one time considered to be a common sequel of typhoid fever and some of us gained the impression just-

ly or unjustly from our teachers that typhoid served as the commonest cause, if not indeed practically the sole cause of "gallstones." This was so impressed that when the universal question was put and the answer came "no, I never had typhoid," we either doubted the truth of the answer or considered the trail to be getting rather cold. That belief is no longer tenable, no longer held. We know now, if not that typhoid plays a very minor part in the etiology of cholecystitis, certainly that it does not play the major.

In cholecystitis, however the bacteria may have reached the gall bladder, it is important to emphasize as has been so strenuously and often done in the past, that the bacteria are not inside the gall bladder cavity—all that are cause no harm, except may be to serve as nuclei around which stones are built—but they are in the substance of the wall of the viscus, buried in the mucosa and the musculature, among the lymphatics, in them even, and among the blood vessels. In other words, there is no difference between an inflammatory process in this and other structures of the body, so far as distribution of bacteria is concerned. This has important significance from the standpoint of treatment, since no drug comes into contact with these bacteria by being eliminated in the bile, hence no drug can be expected in this way to sterilize the gall bladder, more than it would an inflamed hand, and the only hope of benefit from such treatment must be derived from the age-old fundamental decongestion and physiologic rest. If, further, it is true, as many of us believe, and as laboratory investigation and clinical facts seem to warrant, that once bacteria are buried in the gall bladder tissues they remain there always, it is the obvious conclusion to say

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there is no therapeutic cure for cholecystitis and surgery remains as the only hope of complete cure. The logic of the situation drives us one step further that if the above assumption of permanent habitation in the gall bladder wall is correct then only cholecystectomy can prove an absolute cure. This is certainly contrary clinically to the experience of many men who still remember doing large numbers of cholecystotomies, I among them. Certain it is that one never knows when another of his old cholecystotomies will return for relief from recurrence, which inclines us back to the first view, that they may be quiescent but are probably not cured.

Once the infection has extended to the serosa, adhesions form between the gall bladder and adjacent viscera. For good anatomic reasons the two most frequently adhered structures are duodenum and colon. But where the gall bladder is much elongated naturally or from overdistension, or where a Riedel's lobe drops it more deeply into the abdomen, it is obvious that the normal relations of the gall bladder are lost and new ones established which may become adherent to it, even so low down in the abdomen as the urinary bladder.

The consequences of adhesions are numerous, varied and often important. In the first place, adhesions to stomach or duodenum are of significance in diagnosis of cholecystitis in x-ray examinations more commonly than any other evidence discoverable either by fluroscopy or skiagram, much more common than recognizable shadows of stones, and, though I am not a roentgenologist, I believe much less susceptible to misinterpretation than such vague shadows as may be obtained. These adhesions to duodenum and stomach displace these structures to the right or upward to the right, fix them there, and reduce the normal mobility under manipulation of the viscera. Second, the adhesions are sometimes so dense and extensive as to render the operation of choice almost, if not altogether, impossible and necessitate the substitution of a makeshift. If at the same

time the gall bladder wall is much thickened and friable—both of which it often is—removal of the gall bladder is much more difficult because it is impossible to identify the cystic vessels and the common and hepatic ducts, because of the danger of making traction on the gall bladder and the size and friability of the cystic duct, unfitting it for crushing and for safe retention of the ligature. It has hapened in my work more than once that I did not consider it possible to remove the gall bladder without imposing undue risk. I am by no means sanguine that it will not sometimes occur again. Third, adhesions between gall bladder and a hollow viscus account for the escape of stones too large to pass the natural way, and for the harm they may cause in the intestine, producing obstruction, lodging in the appendix and resulting in, or at least being found in conjunction with appendicitis, or escaping into the urinary bladder. Some of these conditions are rare, but the treatment of rare conditions is just as important to the patient having them as that of common conditions is to those who suffer from them. It is a truism to say that men become good in diagnosis and therapy directly in proportion to their ability to recognize and treat rare conditions. That is one great reason why men specialize, to become acquainted more intimately with conditions that are rare to men not specializing.

There is no doubt that chronic pancreatitis is often associated with cholecystitis, no doubt in the minds of men who often put their fingers on these structures that now and then the pancreatic lesion seems to be the more important of the two, the chief if not the first offender, and, so far as one may judge, the one that in treatment must be accorded precedence, and in prognosis most feared. So long as the gall bladder is in situ and tractable there remains hope for a second operation to give relief if the common duct obstruction fails to subside on drainage; if the gall bladder is removed at the first operation, then what may we offer in case of failure. Moreover,

at the first operation drainage can be done more easily, more safely, if the gall bladder is not removed. The pancreas must be relieved if possible, before it is affected to the point of seriously crippling the islands of Langerhans, thus introducing finally a metabolic disturbance which assumes a fundamental role in altering the hope for cure by any plan.

Cancer of the gall bladder is not a common condition, yet as pitiable as uncommon, more pitiable because it results from cholecystitis so often that one is probably justifiable in thinking this cause to be universal. Numerous authors have found such a history in from 95 to 100 per cent of the cases studied, and all of them were curable during the cholecystitis period of five to fifty years.

When the common duct receives a stone from the gall bladder, which is the almost universal source of such supply, and is unable to pass the stone into the gut, two new factors are introduced, increased difficulty of operation and poorer prognosis on the one hand, jaundice on the other, the latter being responsible for a large part of the mischief embraced in the two items of the former. Jaundice plays an important factor in prognosis. It is convincing to any one who will study a large number of cases that jaundice does something awful to the mechanism, to the metabolism of the body, something more than we know in its elemental workings. This conviction manifests itself in the frown upon the surgeon's face when called upon to operate on the jaundiced patient. That frown comes from memories conscious or subconscious of other cases of the kind he has operated.

The remote changes that occur in cholecystitis, silent or producing symptoms, would lead us too far and must be omitted.

Let me resume. In the beginning cholecystitis is rather simple in pathology, in symptomatology; in treatment it is rather sure, having an exceedingly small mortality. As it progresses, it reaches out and dismantles first one fortress of defense and then another, increasing the difficulty,

increasing the duration and shock of operation, diminishing the chances of complete cure, multiplying the mortality, until we are sometimes compelled to refuse certain of the late cases as utterly hopeless, or, if we operate, to do so in the fear of a staggering mortality. These things are so. This is the course of pathologic advance of gall bladder disease. Is it reasonable to wait?

#### DISCUSSION

DR. W. O. FLOYD, Nashville: I think Dr. Bryan has given us a valuable paper. I have only one or two points that I want to mention, one in reference to jaundice. It is dangerous to do any surgery in the presence of jaundice. There seems to be something in the blood other than the clotting time that gives trouble. I recall one case with a three and a half minutes clotting time, normal before operation, but after operation the jaundice cases bleed so often from the wound and in this instance it was necessary to transfuse very hurriedly to save life. Within a few minutes this wound stopped bleeding following transfusion, so I think there is something in the blood in jaundiced patients except the clotting time that causes the trouble.

In regard to the pancreatic cases, Dr. Bryan did not mention this, but we know it is customary to drain the gall-bladder in cases of acute disorder. The question is, what does the drainage of the gall-bladder do for acute pancreatitis? We know that the pancreatic juice does not drain back through the gall-bladder. Leaving the gall-bladder in only allows of drainage of the bile, and the question is whether the drainage of the bile is sufficient to give pancreatic relief, or if in the few cases where the gall-bladder is removed they apparently go on and do as well as in the cases where drainage was employed. The question is whether the removal of the foci of infection by the removal of the gall-bladder, if such be the case, had anything to do with relieving the pancreatitis. I do not know what Dr. Bryan's idea is, but would be glad to hear it in his closing remarks.

DR. W. A. BRYAN, Nashville (closing): In speaking of the pancreas I had reference more to the chronic than the acute type, but am glad to speak about this other point. Trendelenberg published an article in the *Muenchener med. Wochenschrift* just before the war in which he made this paradoxical statement, that the cases of cancer of the stomach which he operated upon with a history of six months duration had a much higher recurrence mortality than the cases he operated on with a history of six to twelve months duration; which is contrary to everything we have

thought. When he explained this, the thing was simple enough because, as he said, there is the hyperacute type of cases in which the patients are dead after six months if we do not operate on them. In the cases of acute pancreatitis I think there is a good deal of truth applicable in this record of Trendelenberg, namely, that most of them die and we do not get to operate on them. I am not sure but that removal of the gall-bladder would be just about as good treatment as the other. On the other hand, I am not sure that a good many of the cases of pancreatitis that live over the first attack long enough to come to the surgeon are benefited, as to that immediate attack, by any operation. They nearly all have a gall-bladder that requires operation, and I do not hesitate to do that, but how much the removal of the gall-bladder or drainage has to do with the relief of that first attack I do not know.

I think we are in the habit of looking upon gall-bladder lesions rather too lightly, because these patients can have an attack and get over it. We

say, "You will get over it and then you will be all right." I do not know about that. All men who have operated on gall-bladders have this experience—a patient comes in with the blood pressure pretty fair, the coagulation time all right, the urinalysis all right. The operation is performed and he stands the operation all right, the anesthetist brags about you and himself and all are happy for two or three days. Then they call you up and tell you that the patient's heart is getting fast. That scares all of us, for when that happens they nearly all die. They have something wrong with their heart. I got in wrong with the Academy not long ago because I maintained that these patients have some myocardial lesion that we cannot discover. When they come in with a complication that originated in the gall-bladder I always think what a pity it is that the gall-bladder was not taken out. In other words, surgery of the gall-bladder is a reasonably safe procedure. We never know just how safe it is to leave that gall-bladder alone until the patient is forced to have it out.

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## FRACTURES OF THE SKULL\*

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MURRAY B. DAVIS, M.D., NASHVILLE

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A Study of Thirty-two Cases of Fracture. The Management and the Immediate End-Result of This Type of Fracture. Mortality.

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ON ACCOUNT of the seeming increase of acute brain injuries, with or without fracture to the skull, no doubt in a large part due to the increasing use of automobiles, I have gone over the records of thirty-two such injuries at the Nashville General Hospital, handled while I was there, in hope that some helpful information might be gained as to the management of these conditions.

It is well to bear in mind when discussing head injuries, that the injury of most consequence is the injury to the brain and not to the brain box; in fact, very severe injuries to the brain box may be associated with no signs of brain injury. I will take up this type of case later on.

A very deceptive feature of head injuries is the appearance of external wounds. This can never be taken as an index to the severity done the deeper structures. I made it a rule at the hospital to explore, with a gloved finger, all wounds of the head which were large enough to admit the finger, and in case the wound was too small, to enlarge and explore it. Also, suspicious hematomas were explored. In one or two cases we found depressed fractures on patients that we did not even suspicion.

Case 1. Mrs. P. E. B. was brought to the hospital with a small punctured wound over the right parietal region, received in an automobile accident. The physical examination was negative. She had never been unconscious; she complained only of a headache; wished to have the wound dressed

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and go home. The wound was enlarged and explored and a small depressed fracture was felt, which was confirmed by x-ray. Under novocaine anaesthesia the depressed area was raised. The patient remained in the hospital fourteen days, and was then discharged as cured. If this case had not been examined thoroughly, she would very likely have suffered some serious results.

Every case of cranial trauma, even though the symptoms disappear rapidly, should be subjected to a routine neurological examination, which will frequently reveal positive evidences of fracture otherwise overlooked. Also, all cases of head injury should be kept under observation for at least twenty-four hours to rule out intra-cranial hemorrhage.

Case 2. Jim S., colored, was brought to the hospital by a policeman. He had a hematoma in the left temporal region, probably as a result of a blow from a club. He was conscious; complained of no headache; pupils equal; had odor of alcohol on his breath. The interne on that service, thinking his injury of no serious consequence, discharged him to the police. He was found dead in his cell the next morning at the police station. Autopsy showed a rupture of one of the branches of the middle meningeal artery. If this patient had been kept under observation, we might have been able to prevent his death.

I have classified these cases, for the sake of convenience, into five groups:

1. Massive Brain Injuries.
2. Evidence of Injury to the Middle Meningeal Artery.
3. Simple Fracture of the Vault.
4. Compound and Depressed Fracture of the Vault.
5. Fractures of the Base.

#### GROUP 1. MASSIVE BRAIN INJURIES.

These cases of massive brain injury, with evidence of rapid exhaustion of the medullary centers and death in a few hours, are of such a nature as to render any effort of surgical intervention futile. We had four of these cases, these patients dying

from within a few minutes after their entrance into the hospital up to ten and twelve hours from the time of the accident. In these cases any surgical procedure is hopeless.

#### GROUP 2. INJURY TO THE MIDDLE MENINGEAL ARTERY.

There was only one case with diagnosed evidence of injury to the middle meningeal artery, which terminated fatally as I have already reported. Regaining consciousness for a period of time, followed by a lapse into semi-consciousness, is almost pathognomonic of intra-cranial hemorrhage. This condition can occur with a rapidly increasing edema, but the period of consciousness is longer and the period of unconsciousness is of slower onset. And not in every case must the force of the blow render the patient unconscious to cause a rupture of one of the intra-cranial vessels. Again, I repeat, every case of head injury should be kept under observation for at least twenty-four hours.

#### GROUPS 3-4. SIMPLE AND COMPOUND FRACTURES OF THE VAULT.

The dividing of simple and compound fractures of the vault into bending, bursting, linear, stellate, etc., confuses the real surgical considerations; namely, whether or not they are depressed, or whether or not they are associated with intra-cranial hemorrhage; for fractures of the vault that are not depressed, and that are not associated with any intra-cranial hemorrhage are, as a general rule, of no serious consequence, provided, of course, that you keep down intra-cranial pressure.

The blood pressure of every case with even a possible fracture should be taken every hour for the first few hours, until a persistently rising blood pressure is excluded, for, as Eagleton says, "An increasing intra-cranial pressure sufficient to cause a persistently rising blood pressure, if not early recognized and relieved, uniformly results in death from respiratory paralysis."

Cushing, in a series of experiments, showed that intra-cranial compression was

a compensatory process; that, when intra-cranial pressure exceeded the blood pressure, a rise of the latter occurred, and this tended to remain slightly but constantly above the line of intra-cranial tension. The result of such a rise of blood pressure was obviously a protection against bulbar aneemia. So long as this relation was maintained, disturbances of the pulse, respiration, and cerebral symptoms were, in a great part, absent and death was not imminent until the blood pressure was no longer held above the pressure of the compressing fluid forced into the cranial cavity.

I made the mistake, in one of these cases, of concluding that a patient had a high intra-cranial pressure because his blood pressure was high at the time, not taking into consideration that the patient might have had a high pressure before his accident.

It is the patient with the steadily rising blood pressure, and the gradual slowing of his pulse, who has increased intra-cranial pressure.

Perhaps the best means of estimating the intra-cranial pressure, is by spinal puncture. By observing the pressure of the flow, you can get a fair estimate of the intra-cranial pressure. I was unable to derive any benefit from the use of the spinal monometer, on account of the restlessness, irritability, and lack of control of the patients. A bloody spinal tap is also diagnostic of subdural hemorrhage.

The value of ophthalmoscopic examination for intra-cranial pressure is of the greatest importance. This should be made routinely for the first few days, for it is claimed that oftentimes evidences are found there before you are able to detect it by any other means.

#### GROUP 5. FRACTURE OF THE BASE.

In fracture of the base, the prognosis is much worse than in fractures of the vault. Practically all the basal fractures are compound, and should be treated as such. Here, as in all cases of suspected fracture, stereoscopic x-ray examination should be made, bearing in mind that a

negative x-ray finding is not to be taken as conclusive evidence of non-existence of fracture. I am unable to say what percentage of basal fractures are diagnosed by x-ray. In nine of our cases, diagnosed as basal fractures, only two were shown on x-ray examination.

#### PRINCIPLES UNDERLYING TREATMENT.

If, on admission, the diastolic pressure is below fifty-five, the patient is in profound shock. The slightest manipulation may send the diastolic pressure a little lower, from where it will probably not rise again. Before the restoration of the diastolic pressure to a higher level, no surgical procedure should be instituted. The patient should not be disrobed, and his wounds should not be dressed beyond what is absolutely necessary to control hemorrhage. He should first be treated for his shock. The treatment then resolves itself into two phases; first, the immediate, and second, the remote. The immediate—to save the patient's life; and, the remote—to prevent him from having the annoying after effects sometimes seen following head injuries.

After he has been successfully treated for his shock, we should then endeavor to determine the nature and extent of his injury. It is well known that all compound fractures should be cleaned up; all depressed fractures should be elevated or removed whether an increased intra-cranial pressure is present or not, for fear of future complications of mentality. If in these depressed fractures, however, there is a great increase of intra-cranial pressure as registered by the ophthalmoscope or spinal puncture, then the operation of elevation or removal of the depression area of the vault should be preceded either by spinal drainage, or sub-temporal decompression, to lower this increased intra-cranial pressure, so that the local operation of elevating the depressed bone can be safely performed without damage to the cerebral cortex, which otherwise may be forced out or extruded by the strong intra-cranial pressure.

Eagleton says: "The surgeon can do nothing to repair lacerated or damaged brain tissue, but if the cerebral compression is removed, nature will frequently bring about a recovery from cerebral injury." So I feel that injury to the cerebral tissue should be largely disregarded, and that we should devote our attention to relieving the intra-cranial pressure.

Much has been written about the subtemporal decompression operation, and I have seen some excellent results obtained with it; but I believe that in all cases of increased intra-cranial pressure, repeated spinal taps should first be tried.

For a long time, it was thought that the cerebro-spinal fluid acted mechanically only as a water bed for the brain to preserve it from injury within the bony walls of the cranium. Jackson, in a recent article in the *Journal of the American Medical Association*, showed that it had a definite circulation, and proved that increased intra-cranial pressure could be relieved by drawing off the cerebro-spinal fluid by spinal taps.

In these cases at the Nashville General Hospital, it was deemed necessary to resort to trephining in only one instance; in the others, we were able to relieve the intracranial pressure with repeated spinal taps, and aided in some of these cases by large doses of magnesium sulphate daily by mouth. The administration of hyper-tonic solutions, intravenously and per rectum, were not used.

Case 3. K. J. was admitted to the hospital at 5:30 P. M. with a history of being knocked unconscious with a baseball bat one and one-half hours previously. The temperature was 98 F., pulse 92. He was conscious on admission but was unable to speak. The systolic blood pressure was 110; diastolic 70. At 8:00 P. M. the pulse was 72; at 11:00 P. M. pulse 60, systolic pressure 130, diastolic 72. At 2:00 A. M. the pulse was 59. At 8:00 A. M. the pulse was 56; systolic pressure 140, diastolic 74. A spinal tap was made at 10:00 A. M. A little over one ounce was recovered under

high pressure. Taps were also made at 2:00, 5:00 and 10:00 P. M., and for the next three days four taps daily were made. His pulse came up to 62 the second day, and blood pressure came down. Taps were made daily for the next three days and magnesium sulphate was given in large doses daily, beginning the second day. His symptoms cleared up, and he refused to stay in the hospital any longer than nine days. I report this case to show that intra-cranial pressure can be relieved by repeated spinal taps.

Case 4. Miss D. E. was brought to the hospital unconscious, with a history of falling into a man-hole on the sidewalk. The physical examination was negative, except for a laceration over the right temporal region. X-ray of the skull showed a linear fracture over the right temporal region. The spinal tap was not bloody, and the fluid not under pressure. The blood pressure on admission, was systolic 160, diastolic 96. It was taken every hour for the next six hours, showing a gradual fall until it reached 140 systolic and 92 diastolic. Ophthalmoscopic examination was negative; the pulse was never below 80. The patient never showed any signs of cerebral compression, and was discharged in three and one-half weeks as cured. I report this case to show that not all cases of fractured skull have cerebral compression.

In the thirty-two cases observed by me, there were nine fractures of the base, with four deaths, or a mortality of 44 per cent. Four cases of massive brain injury with four deaths, or a mortality of 100 per cent. Five simple fractures of the vault with no deaths, or no mortality. Ten compound and depressed fractures of the vault with two deaths, or a mortality of 20 per cent. And four cases of gunshot wounds of the skull with two deaths, or a mortality of 50 per cent.

#### CONCLUSIONS.

1. All wounds of the scalp should be explored. They should be enlarged, if necessary, to allow an investigation of the bone

directly underneath and in the immediate vicinity of the wound.

2. All cases of head injury should be kept under observation for at least twenty-four hours, to rule out intra-cranial hemorrhage.

3. The blood pressure of every case should be taken every hour for the first five hours, bearing in mind that a steadily increasing blood pressure is diagnostic of intra-cranial pressure.

4. An ophthalmoscopic examination should be made on all cases where possible.

5. X-ray examination should be made on all cases where possible.

6. A spinal puncture should be made on all cases, bearing in mind that a bloody spinal tap is diagnostic of sub-dural hemorrhage.

7. In cases with increased intra-cranial pressure, the pressure should first be attempted to be relieved with repeated spinal taps, before you resort to any drainage operations on the skull.

#### DISCUSSION

DR. W. O. FLOYD, Nashville: I think Dr. Davis gave us a very excellent paper and covered the points thoroughly.

I wish to add one point in regard to the basal fractures, and that is the tapping of the spinal canal by repeated punctures, if necessary. If this is done I think we will find that an increased number of these patients can be cured without surgical interference. We have had several of this sort, and I think it is a point that should be emphasized. In a good many cases this should be done before anything more radical is attempted.

DR. LYLE B. WEST, Chattanooga: I certainly agree with Dr. Davis in the value of the ophthalmoscopic examination of the eye grounds in every case. It will often give the first information as to the definite status of the case. The discs may be choked one, two or three diopters before there is any retardation in the pulse and respiratory rates and before vomiting has begun.

Recent work of my friend Dr. Temple Fay in the clinic of Dr. Chas. H. Frazier, of Philadelphia, is quite an advance and simplification in the treatment of increased intracranial tension. Magnesium sulphate is given by rectum, by mouth, or both. This hypertonic solution relieves the medullary edema by dehydrating the brain tissue. For more immediate results a 15 per cent sodium chloride solution is given intravenously. So effective is this treatment for the relief of the symptoms due to so-called medullary edema that in

the past two years in Frazier's clinic there have been only three decompressions for cerebral injury, and in these there were definite localizing symptoms. All other acute head injuries, except those with depressed fractures, were treated with magnesium sulphate solution.

DR. K. S. HOWLETT, Franklin: There is one point that I consider very important to general practitioners, and that is the necessity of making spinal puncture in all cases of brain injury. The statement in the other paper by one of the discussers was that the general practitioner could not make a spinal puncture but should leave it to the surgeon. There are so many reasons why spinal puncture should be made that it strikes me no man should practice medicine without knowing how to carry out this simple procedure. If he does not know how he should learn how. This matter of spinal puncture is too important to be left off, especially in cases of brain injury, and it is well to impress the profession with its absolute necessity.

DR. MICHAEL CAMPBELL, Nashville: I wish to express my appreciation of Dr. Davis' paper. It appears to me that his investigations marks an advance in surgery. Some years ago I had the misfortune to suffer a fracture of the skull. None of the admirable methods of the essayist were used in my case. I recovered, however, as you see, possibly illustrating the proverb, A Fool for Luck.

DR. ROY A. DOUGLAS, Huntingdon: About two years ago I was called to see a child who had fallen four feet and had a depressed fracture of the skull. I advised taking him to the hospital for operation, but the mother objected. Another doctor was called in consultation and he agreed with my theory and we had them in the notion of going to the hospital as soon as the train came. In the meantime some of the people in the town came up to show the mother a child with a depressed fracture of the skull for which they had done nothing, and as this depression seemed to be coming out somewhat, the mother took the boy home. The child is still living with no apparent damage, in spite of our warnings of imminent death and loss of intellect. I failed on the prognosis in that case entirely and could not account for it at the time and have not been able to do so since.

DR. MURRAY B. DAVIS, Nashville (closing): I have very little to say except to call attention to an excellent article by Dr. Temple Fay in the February, 1924, *Surgical Clinics of North America*, in which he reported having lowered increased cerebro-spinal pressure in a series of cases by the use of magnesium sulphate. He also proved, experimentally, that magnesium sulphate was a much better dehydrant to use than sodium chloride. He introduced slowly into the rectum six ounces of magnesium sulphate dissolved in two ounces of water, by means of a syringe, and repeated this as often as necessary.

I wish to thank the gentlemen very much for their discussion.

## FOCAL INFECTIONS IN PREGNANCY\*

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J. F. ADAMS, M.D., BRADYVILLE, TENN.

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**L**OCAL infections are circumscribed regions where pathogenic microorganisms multiply within the tissues. From such foci bacterial poisons and even the bacteria themselves reach all structures and organs of the host and frequently produce changes in function and tissue in remote parts of the body.

These foci may be acute or chronic, transient or persistent. They may and often do exist without demonstrable local or systemic symptoms.

The body is protected from bacterial invasion by the integrity of the skin and mucous membranes which cover its exposed surfaces and by the secondary defenses residing in the deeper cells and intercellular fluids. Of these secondary defenses the white blood corpuscles and lymphatic glands seem to be preeminently important.

The invading bacteria may be killed, ingested or walled off. This last effort to protect the body by walling off the bacteria may result in focal infection. The mere walling off of bacteria without their destruction is within itself conclusive evidence that the chemical and phagocytic activities are below par. In other words, the resistance is low and the invading bacteria have gained a foothold.

The walling off and reparative efforts necessary to protect contiguous tissues predispose to infection of the blood stream through the newly forming capillary loops in the protecting wall.

Thus the adjacent tissues are protected at the ever present risk of blood stream infection. It is now being demonstrated that such blood stream infection is much more frequent than we have formerly believed.

Blood borne infections are seen exceedingly often in our daily work. In the past week I have had three marked cases of such infection. One a case of osteomyelitis of the tibia following injury by striking with the opposite foot in walking, another following injury caused by a baseball striking the tibia, and the last, a young man of 22 years, who is now in my office. He is almost unable to walk from arthritis and many other of his joints refuse to function normally. He has pus in both tonsils and pus exudes freely from his gums.

Such instances as these are so common that an endless report of similar cases is brought out by bringing up the subject in the company of good doctors.

The etiology of focal infection in systemic disease has been abundantly proven by experimental and clinical evidence which does not admit of reasonable doubt. We now know that many diseases formerly thought to be due to metabolic and constitutional causes or put down as hysterical manifestations have been due to focal infections and such cases are being cured by the application of rational therapeutic measures.

It is also known that chronic foci of infection elaborate bacterial endotoxines which find their way into the circulation, come in contact with the body cells, tissues and intercellular fluids and produce hypersusceptibility to infection.

Systemic infection from localized infection occurs through the blood and lymphatics. Owing to the phagocytic action of the lymph glands and cells and the walling off processes that take place in the lymph glands it is probable that more infection is disseminated through the blood stream though part of such blood dissemination may come from foci in the lymph glands

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\*Read before the Middle Tennessee Medical Association, Columbia, Tenn., May 8-9, 1924.

where the spread from the primary focus through the lymphatics has been checked by again walling it off.

Hematogenous infection is embolic in character and the infection tends to lodge in the terminal branches of the stream in which it floats. Traumatism lowers local resistance, first by interfering with local cellular activity and second by damage to the walls of the normal blood channels.

In the light of what has been said, all of which is the accepted teaching of our best leaders, one wonders why the pregnant woman is allowed to drift with an occasional blood pressure reading and frequent urinalysis, the specimens of which she kindly sends to the office. I think there is no doubt that this is probably the best method that can be devised for keeping tab on the pregnant woman. It yields very little information of value either to the patient or the doctor but it is probably the best method that can be devised for keeping the patient in one's own control. It holds business well, which is a splendid thing. I will say in passing that I know of no more unfortunate thing in the practice of medicine than the nomadic habits of present day patients. Urinalysis and blood pressure readings have to some extent saved the pregnant woman to her family physician.

It has been difficult to find any literature bearing directly on this particular phase of focal infection, nevertheless it has occurred to me many times that these foci are a menace to the pregnant woman to a degree out of all proportion to the attention they are receiving. We have presumed that infection following childbirth was due to alien bacteria introduced at the time of examinations during labor and we have refused to admit that pathogenic native bacteria with traumatic contusions and lacerations of labor are probably just as often the cause of our puerperal infections. We still stick to this theory in the face of the fact that women who are delivered without examination are infected about as often as those who have good care.

It is so easy to hold the medical profession guilty for puerperal infections that the laity always do it. Doctors always hold other doctors responsible and occasionally find themselves at fault. Yet I think in spite of all this that general practitioners instinctively pick from all their cases those in which they expect trouble. They do it with precision which for accuracy is remarkable. They were following these hunches, so to speak, long before the days of Billings and Rosenow and it is my prediction that we shall later know that much of our present day puerperal sepsis is due either directly to blood stream infection brought hither from foci in other parts of the body or else we shall find it due to native bacteria with trauma and lowered resistance as predisposing causes.

If the child with a focus of infection from which bacteria enter the blood stream gets a bump on the shin and develops osteomyelitis without an abrasion of the skin, why shouldn't the parturient woman with a traumatized cervix also be exposed to the same dangers in some degree?

It is taken for granted that every woman delivered of a child of normal size has lacerations both on and beneath the mucous surfaces sufficient in extent to admit infection. It is believed that everyone will admit that the reason some women are infected and others are not when under conditions that are apparently identical is more a matter of resistance than of difference in aseptic technic.

Puerperal infections are still prevalent not only in my hands but in yours. I know it and I know you know it. Indeed I think one must admit that every woman is exposed to infection at the time of childbirth and that many of them do not ward it off. If the infected patient is our own, the trouble is attributed to the establishment of the milk flow or to malaria or to constipation or what not and we never forget if perchance the baby was delivered without examination to make prominent mention of that fact. If, unfortunately, the infected patient was yours we may not say it was

your fault in so many words but we act as if it were so loudly that people would not hear what we say in any case.

The truth of the matter is that we are most guilty of many of the infections that occur in our practice when our technic at the time of labor is above reproach. We may have allowed the patient's resistance to be undermined by infectious foci which could have been removed. The reluctance of the profession to advise the same procedure for the removal of infectious foci from the pregnant as from nonpregnant patient, together with a similar reluctance on the part of the patient to accept such advice in pregnancy, is the thing that prompted me to write this paper. Patients are advised to get along as best they can till after pregnancy and confinement are over and then their pyorrheal pockets will be cured and their infected tonsils removed.

It is recognized that the best prophylaxis we have against appendicitis is the removal of infected tonsils. It is known that the best way to prevent gall bladder infections is to remove infected appendices before gall bladder infections occur. It has long been known that gonorrheal arthritis and endocarditis are embolic extensions of gonorrheal urethritis. Malignant endocarditis has been repeatedly produced experimentally by injecting into the circulation streptococcus viridans from the appendix. There is very much more that might be said to sustain the opinion that chronic foci of infection undermine the patient's resistance to infection and at the same time constitute the source from which bacteria pass through the blood stream to distant parts of the body.

That there is a high degree of selective affinity in metastatic infections is admitted

but it is likewise proven that traumatised tissue is the usual site of secondary infection in osteomyelitis. Then why does not the traumatism of even normal labor, free from lacerations of importance, constitute a pabulum on which bacteria may lodge and thrive? I am quite willing to admit that the case of focal infections as the source of puerperal infections is not well proven. The analogy, however, is complete. I know it is not the custom of the medical profession to presume anything, or rather we do not like to admit that we presume anything. Yet I think we must admit that all the conditions necessary to metastatic infection are present in the parturient woman who harbors infectious foci in her body.

Finally the conclusion of the writer is this: Whatever the reasons for removing infectious foci from others may be, pregnancy is an additional reason. We do not know the cause of eclampsia and it may be that in this condition, also, we will receive some reward for ridding our expectant mothers from infectious foci. It has been shown that certain bacteria become pathogenic symbiotically when they are not pathogenic in themselves. It has also been shown that both trauma and fatigue lower immunity. In view of all this I am impressed with the idea that we must insist on the pregnant woman coming to labor, as nearly as can be, free from the menace of focal infections as a simple precaution against puerperal infection. In other words, we feel that the doctor at the present time must come to the confinement case free from infection. Why not insist that the pregnant woman, also, must come to her own confinement free not only from infection, but likewise free from the predisposition thereto.

## "THE HIPPOCRATIC OATH"\*

E. H. BAIRD, M.D., DYERSBURG

I HAVE chosen this evening to depart from the beaten path of the strictly scientific, and instead of engaging in a dissertation upon some hackneyed subject of technical nature to indulge in a few reflections on the broader side of our calling. These are days of progress, of radical thought and action, of marvelous innovations, of great ingenuity, of mechanical miracles that have completely altered our modes of life, our environments, methods of communication, travel and work. It would appear that such complete changes in circumstances, in our milieu, would change greatly the problems of the relations of man to man, of physician to his brother and to his patients, from what they were 460 years before Christ. But even though such sweeping changes have taken place, human nature has remained the same through the centuries, and today rules for human conduct and the underlying principles of man's social and spiritual relationships hark back to the sound teachings set forth in the Sermon on the Mount. What wiser sayings have we today than those of Solomon; and have the simple and dignified precepts of Hippocrates governing the physician's conduct, as laid down in his immortal, Oath, been improved upon in more than two thousand years? Born 460 years before Christ, the soundness and accuracy of his clinical observations entitled him justly to be called the father of medicine. While he was the first physician to place clinical observation on a sound and systematic basis free of superstition and prejudice, he should be honored no less for the rules of conduct which he held himself and which from his pupils he exacted

an oath to follow. Let us reflect upon this oath and make a few observations on the wonderful thoughts embodied and the precepts set forth.

"I swear by Apollo the physician, and Aesculeapeus, and Health and All-Heal, and all the gods and goddesses, that according to my ability and judgment I will keep this oath and stipulation. To reckon him who taught me this art equally dear to me as my parents." In the hurry and bustle of our modern practice we should occasionally pause to render due homage to the pioneers in our profession, and to think on the wonderful benefits to mankind that have been due to the indefatigable efforts, the high ideals, and the unbending purposes of those great men that have resulted in the discovery of anaesthetics, causes of infections, antitoxins, and many other great fundamentals. There is no greater character in history than the humble Pasteur. The destructive and bloody accomplishments of the most dazzling military leader in all history dwindle to insignificance beside the work of the quiet, modest Frenchman who worked against opposition and under great difficulties to succeed in saving more lives and suffering than any other one man. The exploits in bravery of the greatest soldier that ever lived, performed half unconsciously in the heat and excitement of battle, become insignificant beside the bravery of the medical man who deliberately and voluntarily slept in the death bed of a yellow fever patient to prove that the disease was insect borne and not contagious. His act was not done in sight of thousands of comrades nor accompanied by the inspirational music of martial bands. The greatest surgeon among us owes his ability to open the abdomen with absolute safety to the tireless efforts of the humble

\*President's address, West Tennessee Medical and Surgical Association,, Jackson, May 22-23 1924.

workers in bacteriology, to the illustrious Lister who was one of the first to make practical application of the principles of bacteriology to surgery, and to the pioneers in abdominal surgery, among the first ranks of whom should be placed McDowell. We should be particularly proud of him because he practiced and lived close to us in a Kentucky village where he first performed ovariectomy. He did not perform this operation in the elegant operating room with which we are familiar. He did not have the efficient and dignified nurse to calm the fears of the anxious relatives with the quiet assurance that all would be well. He performed the first ovariectomy successfully under the strain that came from the knowledge that his life would be the forfeit if he failed; he performed it with the crudest of instruments and most inefficient of assistants, in the barest and most inconvenient of rooms. The list of patient and humble workers, the courageous and modest pioneers in the advancement of medicine and surgery, could be extended to great length and enough honor can not be given them by those of us who today are inclined to flatter ourselves on the results we get in our practice with the aid of every convenience that scientific skill and organization can afford, and with the help of the most ingenious of mechanical appliances. The list of men who wrested truth from the darkness without encouragement and often in the face of actual opposition could be extended at length—Virchow, Erlich, Harvey, Hunter, Vesalius, Beaumont, Sims and many others whose works mark one or more definite milestones in the progress of scientific medicine and surgery. The study of medical history would be as profitable a pursuit for the medical student or young doctor as any branch in his course. The lives and work, the struggles, aspirations, defeats and successes of the outstanding characters in medical history, furnish an inspiration that would be most helpful and teach the value of patience, perseverance, self-sacrifice and high ideals which are

qualities so desirable and necessary to the men of our craft.

"To share my substance with my fellow practitioners and to relieve his necessities if required; to regard his offspring as on the same footing as our own brothers and teach them this art if they should wish to learn it, without fee or stipulation, and by precept, lecture and every other mode of instruction impart a knowledge of the art to our own sons and those of our teachers."

Doctors are a peculiar and distinct breed of people. The nature of their work makes them so. But one of the peculiarities is frequently a most deplorable feeling of professional animosity toward fellow practitioners. The members of the profession are men of such high education and ideals that they should be above such very mortal emotions as jealousy. The nature of our work, the responsibilities involved, the obscurity that envelops many of our problems, and many other factors, should tend to bind us closer together than any other class of workers on earth. Yet the fact remains that the professional "touchiness" and jealousy of medical men is a matter of common remark, frequently of a disparaging nature, among the laity. There is no spectacle more unworthy of a learned and dignified group of men than two physicians in open professional enmity. The doctor who takes a cut at another does three things: He damages his self-respect, he lowers himself and the profession in the opinion of the patient, and he helps the other doctor. If one is right and the other wrong, as a rule the patient will find it out. If one doctor is really better than another, he does not need to try to impress it on the patient. It will be discovered soon enough. There are certain aspects of the nature of our work that make it impossible to prevent slight misunderstandings between us, but I have an idea that a large element in professional jealousy is the feeling in an individual that he is not entirely sure of his ground. We are not jealous of our inferiors. The ability and learning of our equals should command the same re-

spect as our own. For our inferiors we may feel pity and sorrow for the lack of mentality or application that keeps him inferior, and possibly a measure of forgivable contempt, but never jealousy. If our ability and learning are equal or better than another's, we may rest assured that we will stand as high as he does or higher. The petty dissensions, enmities and jealousies which are so unfortunately prevalent are most unworthy of such a high type of men engaged in such a high and self-sacrificing work.

In these days of endowed universities we are not called upon to teach our art to our children, except those clinicians who unselfishly give so much of their time to class work in medical schools, but we can teach the young doctor much as he starts out on his work that is not taught in schools. How many of us remember the struggles and hard knocks of our beginnings and give counsel to the young man? As a rule, his advent in our community is either regarded by us with half unconscious opposition, or we are entirely indifferent to his existence and allow him to work out his destiny as best he can. This is not always the case, but more common than it should be.

"I will follow that method of treatment which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous." Hippocrates did not live in the days of enterprising and ambitious pharmaceutical houses as we do; but if he did, he could not have covered the situation better than in the above statement. The smoothest of talkers, the men of attractive personality and faultless clothes are calling upon us daily and trying to tell us how to cure our patients with some fancy preparation that means money in the firm's pocket, if we use them. Dr. Harrowitz's "polyglandular mixture No. 12" for impotence and sensility, Dr. Somebody Else's extract that will make new kidney cells, this mixture and that compound—all made to sell. With the thousands of well-trained and earnest clinicians

and laboratory workers in our great medical centers working ceaselessly to determine the medicinal agents that have actual value in the treatment of disease, trying new substances and discarding those that prove useless, and with the scientific publications full of reports of this work, it is hard to understand why such unscientific nostrums continue to be used by the profession. But the fact that they do is evidenced by the millions a year spent in advertising by the manufacturer. Dr. Smith firmly believes that a certain mineral water will cure Bright's disease, and Dr. Jones as firmly believes that another brand will cure dyspepsia. If there were any virtue in either of them, our great research institutions would have made thorough laboratory and clinical studies of them and the results would be published for all to learn. I am afraid that the faith in the curative agents is based all too frequently on a hazy diagnosis and lack of understanding of the pathology and pathogenesis of the disease in which they are used, and to "the crass therapeutic credulity so widespread today and upon which our manufacturing chemists wax fat." In the present state of development of endocrinology, and with the constant change that this subject is undergoing and the decided uncertainty that exists even among the masters of the subject, the dogmatic statements and fraudulent claims for their endocrine preparations by certain manufacturers would be laughable if it were not for the fact that some of them are used by the profession. Phylacogens, proteogens and others of the stripe have no clinical or experimental foundations for their use, and are capable of mischief. There has been lately, thanks to manufacturers of the products, a wave of "intravenous therapy" enthusiasm. Outside of a few well-defined drugs, it is doubtful if any drug or compound exerts any more definite or beneficial action intravenously than it does by mouth or rectum. It is true that the effect on the patient's mind is much greater; but when we give a drug we, to be honest,

should give it for its pharmacological action. But the injection of potassium iodid, iron, arsenic, salicylates and other foreign substances into the circulation is enthusiastically being done by some physicians, the dangers attendant upon the indiscriminate intravenous injections, however slight they might be, being greatly outweighed by the impression upon himself and the patient that he is doing something bigger or more scientific than giving the same drug by mouth or rectum. I am aware, of course, of the special indications that exist for the very rare use of such methods. Just as we should be honest and conscientious in the selection of medicinal agents in the treatment of our patients, so should we exercise the same care in prescribing a surgical operation or other specialized treatment for our patients. The surgeon or other specialist should be selected to give specialized treatment who is the most competent and easily available. The doctor who carries his patient to a surgeon or other specialist because he gives the doctor a part of the surgical fee is about as low in the scale of ethical and scientific existence as the abortionist. And the surgeon who splits a fee with a referring physician is as low as the other. It is painful to speak of such a subject before a body of men of the high class that this gathering represents. But, however unpleasant it may be, it is necessary that we lend all our influence and energies to fight the practice. It is impossible to estimate how widespread the practice is, but we all know that it exists. It takes a variety of forms and under such guises that it is hard to prove. The temporary partnership is one form, wherein the surgeon does the operation "with" the referring doctor and admits him to the fee on the same terms. There are laws against the practice, and no uncertain expression by medical organizations on the subject. But both the machinery of the law and of the medical societies are powerless to take any action even where there is reasonable evidence that the practice exists since actual proof is hard to get. The

subject should be frequently discussed, and the sentiments of the true physicians, both individually and collectively, should be expressed so emphatically that there can be no misunderstanding on anybody's part as to the sentiments of the true physician on this subject.

"I will give no deadly medicine to any one if asked nor give any such counsel. Furtheromre, I will not give to a woman an instrument to produce abortion." It seems that human nature is about the same now as in the days of Hippocrates, and that he had the abortionist with him and that his ideas on the subject were the same as those held by ethical physicians at present. Fortunately it is unnecessary to make any remarks on this subject before such a body as this. The rare individual who sinks so low is well known by the physicians around him and receives the contempt that is justly due him.

"I will not cut a person who is suffering with a stone, but will leave this work to be done by practitioners of this work." It would seem that in the infancy of our profession, when the whole extent of medical knowledge was narrow, a realization of the limitations of a practitioner's ability was recognized. Yet in these days of highly specialized knowledge, when years of intense application are necessary to adequately master a branch, there are men who simultaneously practice medicine and do major surgery. It would appear a keen mind, indeed, that could master and keep abreast of the rapid progress of any two of the major branches of practice simultaneously. We should choose the branch for which we are best fitted and concentrate on that and do it well. Of course, the well-balanced surgeon or internist should have an intelligent knowledge of the other branches of practice, but the surgeon who devotes the time and study that he should to the various problems of his branch cannot at the same time keep familiar with the intricacies and minutiae of internal medicine. And here let me say that I believe that general practice is as true a spe-

cialty as is surgery, internal medicine, or urology. It is not every man, no matter how well trained, how much of a scholar, or how broad his knowledge of medicine may be that can do a successful general practice. The general practitioner has problems to deal with that the specialist does not. Some of the greatest truths in medicine have been worked out by general practitioners in the rural districts, and the sainted Osler had nothing but the highest admiration for the professional achievements of the scholarly, studious and earnest general practitioner. We might repeat with Chas. H. Chesley:

"If any man upon this earth  
Can win his way to paradise,  
The country doctor's works of worth  
Should merit mansions in the skies.  
His good deeds are not done for show,  
He hides, in fact, his kindly light;  
When sickness comes, he's on the go  
From early morn till late at night.

He starts out early in the morn,  
A visit here, a visit there;  
The old man with his life most gone  
Smiles brighter from the doctor's care.  
If any man can rest at night,  
With consciousness of work well done,  
The country doctor has the right—  
He knows how dreams of peace are won.

And yet the bigger and more successful a practitioner is, the more clearly does he know his limitations and the quicker he is to recognize a problem that is beyond his ability to handle. This applies to both surgeons and other specialists.

In the past the situation of the general practitioner has not been a pleasant one as a rule, particularly in the small towns and country districts. He has been the uncomplaining slave of an exacting public which has put off paying his bills as long as possible. The doctor himself has not been entirely blameless for his poor financial returns and for the unreasonable demands made upon his time and strength. Doctors as a rule are poor business men, but we owe it to ourselves and families to place our practice on a sound business basis so that old age will not find us financially dependent or embarrassed. The education of the public to a proper consideration of

our working hours and observance of periods of relaxation and diversion will materially increase the happiness and longevity of the family doctor. It has pained me greatly during the last five years to see the number of practitioners among my own personal friends who are breaking rapidly in health, some to the point where they are required, while still young, to retire from active practice; others, in fact a half dozen, during the past year, while still comparatively young, have passed to their reward. The man who cuts fees has been a large factor in keeping the financial rewards of the general practitioner from being what they should. If one man in a community has not enough self-respect or does not value his own services enough to charge the regulation fees, it should not keep the other physicians from being just to themselves. The better class of patients has more respect for the doctor who values his own services, and recognizes that the man who values his own services cheaply performs a very cheap class of service.

Let us strive only for the highest ideals, think always only of the welfare of our patients, respect and honor our fellow practitioners and so live and work that we will command his respect; and "while we continue to keep this oath unviolated may it be granted to us to enjoy life and the practice of the art, respected by all men at all times, but should we trespass and violate this oath may the reverse be our lot."

Gentlemen, I am sensible of the honor that is mine upon this occasion. The West Tennessee Medical and Surgical Association is a most valuable society, and fills a place that no other does. Both from a social and scientific standpoint, it is equal to any of our medical bodies, and I have always had much affection for it. Its past has been great, and its future is brilliant. The class of men who attend its meetings and the enthusiasm shown in the discussions are not exceeded by our state society. And yet it belongs to us of this section, is of us, and we are proud of it. A medical society is indispensable to a physician. In no oth-

er calling or profession is the technical knowledge on which it is based changing so rapidly. In no other profession is there such a constant need of continual education, and Plato remarked that education is a life-long business. The problems of disease are more difficult and complicated than any others with which the trained men has to grapple. "Law, constantly looking back, has its forms and procedures, its precedents and practices. Once grasped, the certainties of divinity make its study a delight and its practice a pastime; but who can tell of the uncertainties of medicine as an art?" It is the exchange of experience and ideas born of hard work that takes place in a society such as this that makes its meetings so valuable. Opinions are exchanged, and "the practitioner too often gets the habit of mind that resents the thought that opinion, not full knowledge,

must be his stay and prop." The immortal author of our oath laid down an aphorism that "Experience is fallacious and judgment difficult." It is only by a discussion of experience and opinions, frequently at a variance, that the practitioner can keep well balanced. Let us keep the enthusiasm in this society increasing, and by so doing we will do our part in keeping the practice of medicine the highest of arts and sciences and preventing it getting in the situation that the writer Garth in 1699 so deplored

"How sickening Physick hangs her pensive head  
And what was once a science, now's a trade."

"Let us hold fast the profession of our faith without wavering. And let us consider one another, to provoke unto love and to good works: not forsaking the assembling of ourselves together, as the manner of some is."

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## INSULIN IN THE TREATMENT OF DIABETIC COMPLICATIONS\*

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W. T. DESAUTELLE, M.D., KNOXVILLE

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**D**IABETIC patients are perhaps more susceptible to infections and gangrene than any other class of patients, and when such complications occur the outlook in an otherwise mild or light disease becomes at once grave. A slight local infection may quickly develop into a septicaemia, and an inflamed bruise result in a loss of a limb, or still more unfortunate a loss of life. Avoidance of exposure to injury and infectious diseases should ever be the care of one suffering with diabetes mellitus.

During the past eleven months there have come under my observation forty-four cases of diabetes mellitus, fifteen of which suffered with complications of some type

or other. Of these fifteen eleven were treated with insulin, and four were not. Five patients had gangrene of one or another member; one chronic cholecystitis; three had pyogenic infections; one tuberculosis of the lungs; two eye complications; one palsy of the external muscles of the eye; one a purpuric like affection; one mastoiditis. Three of these patients were chronic syphilitics, one being hereditary. Two patients of this group died, the other thirteen are still living. The patients who died suffered with a gangrene, the details of which I will give later.

"The advent of infection lowers the tolerance of a diabetic for carbohydrates, and thus increases the severity of the disease. This is an old and reliable clinical fact." (Joslin.)

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\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

Cases J. S. A. and Mrs. D. demonstrated this fact. J. S. A., a man aged 56, though aware of the fact that he had glycosuria persisted in refusing to diet for two years until his weight decreased from 185 lbs. to 147 lbs., when the attendant weakness forced him to seek aid. Regulation of his diet showed he was able to take 3,000 calories and remain sugar free. But with a return of strength and energy he soon became careless and discontinued the use of his scales. Sugar in large quantities promptly reappeared in his urine, but this did not concern him until he was forced one day by an overpowering weariness to cease his work. On arriving home he decided to go to bed in the middle of the day—a desire which had never come to him before in the daytime. The urine showed besides much sugar, a considerable quantity of acetone and diacetic acid. Twenty-four hours later he complained of a soreness between the fourth and fifth toes of his right foot. There developed very rapidly on the little toe a swelling which extended to the dorsal surface of the foot towards the outer half. It was red, hot and tender. No delay was made in using insulin. He was given 30 units and placed on a diet of 2400 calories. Surgical treatment was begun at once. The glycosuria diminished in 24 hours, and the infection of the toe showed no further indication of extension. The following day a considerable quantity of pus and dead tissue was removed from between the fourth and fifth toes, and healing promptly took place. As the infection subsided it was possible to reduce the insulin, but irreparable damage had been done to his sugar controlling organs for where formerly he could tolerate a diet containing 110 gm. of carbohydrates without insulin, he can now only utilize 94 gm. of carbohydrates by using 15 units of insulin daily. I think the insulin saved this man from the horrors of a gangrene.

Mrs. D. had been gaining strength, energy and weight on a diet of 2500 calories containing 93 gm. of carbohydrates. She was taking 25 units of insulin to utilize this

amount, when she had an attack of tonsillitis, in fact several flare-ups of an old chronic condition. Sugar promptly appeared in her urine and could only be controlled by increasing the dose to 50 units and after the tonsillitis had subsided, it has never been possible to return to the previous dose of 25 units; her urine at present just remains sugar free with 30 units, though the original diet of 93 gm. of carbohydrates has not been changed. No doubt the infections in J. S. A. and Mrs. D. not only lowered their carbohydrate tolerance, but permanently increased the severity of the diabetes in each instance.

The most serious case of pyogenic infection which came under my observation was that of J. S., age 47, and I believe that the radical treatment instituted preserved his life. About three weeks before entrance to the hospital the patient developed an abscess on the outer portion of the left thigh, and another on the inner surface of the same thigh. These became very large, red, and swollen before he consented to enter the hospital for treatment. The man was operated on before a urinalysis was done which revealed the presence of large quantities of sugar in the urine. The patient had no idea that the urine contained sugar before the hospital examination, but he had been drinking a "sight of water." Enormous quantities of pus were evacuated from the abscesses. The blood showed a concentration of .19 per cent sugar. The urine showed a very large quantity of sugar, a small quantity of acetone and no diacetic acid. The patient was placed on a diet of 9 gm. of carbohydrates furnishing 2290 calories and insulin begun at once. The dose was quickly increased until he was taking 35 units of U-20 daily every morning before breakfast, and under this treatment the blood sugar dropped from .19 per cent to .12 per cent in about four days time. The urine sugar disappeared, and the general aspect of the case seemed very favorable. For several days the diet and insulin sufficed to hold the patient under control. Then the fever which had returned to nor-

mal began to rise until it would reach 102.2 degrees every afternoon. The patient appeared to be profoundly toxic, his resistance apparently being overwhelmed by the infection. A large abscess appeared between the thumb and forefinger of the left hand, and in spite of profuse purulent, foul smelling drainage from the wounds in the thigh, a great swelling arose in the left popliteal space. At the beginning of the onset of the fever, and the appearance of the toxic symptoms, the patient's blood sugar gradually rose until it reached a level of .28 per cent, varying between .24 per cent and .28 per cent over a period of about fifteen days. During this time the insulin was increased until he was taking 80 units daily, and although the blood sugar remained at a high level, (0.20 to 0.25 per cent) his urine during all this time was negative, or at worst only showed a trace of sugar. Acetone and diacetic acid did not appear. The patient was reduced to such a low state that the end was expected at any moment. Thorough incision of the abscesses with enormous drainage of pus did not change the general condition a great deal, although the fever began to fall. Insulin was given regularly, and gradually, the man began to take an interest in his surroundings, improvement progressing until he was able to leave the hospital fifty-three days after entrance. As the toxæmia subsided the dose of insulin was reduced to 25 units of U-20 daily without changing his diet of 96 gm. carbohydrates furnishing 2290 calories. Corresponding with the improvement, the blood sugar gradually dropped down until it varied between .11 and .13 per cent, and the urine remained sugar free. It was interesting to note that after the insulin was begun, although the blood sugar rose to a considerable concentration, (0.20 to 0.25 per cent), we were enabled to keep the urine sugar free over a period of about 40 days. Three months after discharge from the hospital this diabetic is in good condition, and gets about well, though it is necessary to continue the 25 units of insulin daily. The increase of glycosuria

and greater amount of insulin, 80 units, necessary to control the hyperglycaemia illustrates very forcibly the power of infections to lower carbohydrate tolerance and increase the severity of the diabetes.

Two cases with eye complications came to the hospital. L. L., aged 29 years, had been ill for several weeks before his diabetes was discovered. One of his first complaints concerned his eyesight which he claimed had been failing very rapidly during the past two months. The oculist, Dr. J. Marshall Lea, reported the retinae very red, nerve heads congested, increase in size of blood vessels over the nerve in both eyes, media clear, diagnosis neuro-retinitis. Ten days after the control of his disease with diet and insulin, the eyesight was greatly improved and in three weeks he stated he could see as well as he ever could.

In contrast to this rapid improvement, is the case of Mrs. J., whose diabetes was of longer standing than L. L., but whose eye condition began three months before admission to the Knoxville General Hospital. Dr. H. E. Christenberry reports as follows on the eye condition: Increased tension in both eyes; vision left eye, fingers at 18 inches; cornea hazy; injection of blood vessels down over limbs and margin of cornea; pupil contracted, conjunctiva red and thickened; fundus not very clear, hazy and vessels small. Right eye vision 20/40; fundus somewhat hazy; some deposits or changes in retina; vessels small, especially arteries; media practically clear—diagnosis sub-acute glaucoma. This patient desired no hypodermic treatments and received diet only. Six weeks after institution of this treatment the eye condition is practically unchanged except she is relieved of pain in the left eye. Perhaps other factors than the diabetes are responsible for the condition of her eye, and no doubt her age (75) is responsible for such a slow response, but I wonder if prompt treatment with insulin would not have hastened resolution of her affected eye.

Only one unfortunate patient suffering with pulmonary tuberculosis and diabetes

came under my care. Mrs. R. age 55, arrived at the hospital in almost a state of collapse. She was a tall thin woman, whose color was almost gray and who appeared utterly exhausted. The blood sugar test showed 0.36 per cent and a large quantity of sugar appeared in her urine. The percussion note showed impairment over both upper backs but rales were only heard at times over the right upper front. She coughed very little and that not a productive one. The temperature rose daily to 102.5 degrees to 103 degrees. The scant sputum was examined every day for seven days before tubercle bacilli could be demonstrated. Mrs. R. also had an abscess about the size of an English walnut on the ankle of the left foot. Response to dieting was prompt and in a few days her tolerance was determined at 23 gms. of carbohydrates. For maintenance this woman required 1300 calories, but in view of her infection a diet of 1800 calories, carbohydrates 65 gms. was prescribed and controlled with 20 units of insulin. The abscess cleared up at once after incision. However, with a perfect control of the sugar metabolism the daily temperature was not affected in the least; in fact it went higher, nor did the patient gain in strength or weight; instead she lost four pounds in three weeks under conditions which ordinarily have increased weight. The tubercular infection did not seem to affect the glucose tolerance as compared to the lowering caused by pyogenic infections or gangrene, nor did the fever of itself seem to be a factor in diminishing utilization of glucose.

Of the five cases of gangrene which came under observation two died.

F. W., colored patient, aged about 54, came to the hospital complaining of an ulcer of the right foot and the first and second toes, which began with swelling nine days previous; had softened and were pouring out a considerable amount of serum. The patient was not entirely rational on admission. She had the usual symptoms of diabetes mellitus.

The patient was a thin, emaciated old colored woman who objected to all efforts at treatment. The great toe and second toe of the right foot and an area further up on the foot of about three inches in each direction were gangrenous, of the moist variety, and very foul smelling. On pressure there was a peculiar crackling of the tissue that suggested gas bacillus infection, but aspiration of some of the fluid from the affected tissues showed streptococcus, and a staphylococcus.

No gas bacillus could be found. The blood sugar was 0.35 per cent. Urine; large quantity of sugar, acetone large quantity, diacetic acid small quantity. The patient was put on a diet containing 50 gms. of carbohydrates, but she refused to eat only a very small portion of the food. The following day she was given 150 units of insulin in five doses of 30 units each, each dose being followed by 150 cc of orange juice. In the morning before breakfast, the blood sugar was 0.42 per cent and at 10:30 P. M. it had dropped to 0.18 per cent. The following day, in the morning before breakfast, B. S. was 0.28 per cent. On this day she received 90 units of insulin in three doses and her blood sugar remained around 0.28 per cent all day. The urine showed large quantities of sugar. The fourth day the blood sugar in the morning before breakfast was 0.36 per cent, but urine sugar had dropped down to a very small quantity. As it was impossible to get the patient to take any nourishment, the stomach tube was made use of, and following each dose of insulin she was fed through the tube. Ninety units of insulin did not change the blood sugar very much, in fact on this day the blood sugar rose as high as 0.42 per cent, but late at night had dropped down to 0.28 per cent again.

On the fifth day insulin was the same as before, blood sugar remained the same as before, the urine still contained sugar. On the sixth day the insulin was increased to 100 units with no appreciable affect upon her blood sugar. On the seventh day the patient received 110 units of insulin, and

on this occasion the blood sugar dropped from 0.29 per cent in the morning to 0.15 per cent about midnight. All during this time patient was on a diet of 60 gms. of carbohydrates, 45 gms. protein and 48 gms. of fat, furnishing 1076 calories.

All the treatment was unavailing and patient died on the morning of the eighth day.

On the second day the patient's output of urine was very markedly diminished, albumen was present in very large quantity, hyaline, and granular casts in large numbers, a few pus cells, and a few red blood cells were present. Blood chemistry showed non-protein-nitrogen 80 mgm per 100 cc; urea, 27 mgm per 100 cc; creatinine, 3.9 mgm per 100 cc; and during her entire stay in the hospital the urine showed the same features just stated. Patient's Wasserman was negative. Red blood cells 3,904,000; white blood cells 32,800, haemoglobin about 80 per cent.

This patient came to autopsy and both kidneys were found larger than normal, capsules stripped with great difficulty, leaving a rough, indented surface. On section the cortex was seen to be greatly thickened and dark red in color. Heart was rather small and flabby, mitral valves showed a considerable area of atheroma, aorta throughout its entire length was covered with enormous atheromatous patches, and its walls were firm and brittle. All of the arteries, both large and small, showed extensive sclerosis of their walls. As sections were cut through the various organs, the knife would grate and crack over the hardened arteries which they came in contact with very frequently. The bladder contained about 300 cc of urine, which on examination was found to contain a large amount of albumen, innumerable casts, hyaline, waxy, granular and cellular. There was a small amount of sugar present in this urine. The pancreas was thin and flattened and in some areas the lobules appeared to be merely connected to adjacent ones by fine webs of connective tissue.

On microscopical examination the pan-

creas show areas of apparently normal pancreatic tissue, in other places there seems to be a congestion of the blood vessels and some of the vessels showed hyaline degeneration in the walls; all of the arteries were extensively thickened, and in places the intima was seen to be piled up with small round cells. There was a very considerable amount of connective tissue in many places intersecting the glandular structure, and apparently breaking up the formation of the acini. In some areas there was an absence of lobules, singly and in groups, and the tissue replacing this seemed to be fatty tissue. Along one surface of the pancreas was seen a very thick, partially degenerated layer of blood beneath which in the substance of the pancreas were observed a large number of small round cells. A few islands of Langerhans were seen, some of them appearing fairly normal, others showed definite hyaline degeneration—low grade chronic hemorrhagic pancreatitis.

On examination of sections of the kidney, the cortex was seen to be swollen and thickened, the cells of the secreting tubules showing a very extensive parenchymatous degeneration, the lumen of the majority of them being filled with cellular detritus. Many of the glomeruli showed invasion by small round cells, more of them were seen as homogeneous hyaline masses, and in the areas observed about the glomeruli and between the tubules were innumerable groups of large numbers of small round cells. The collecting tubules were moderately diminished in number; very many of the epithelial cells showed beginning necrosis; a great many of them had been destroyed and obliterated and between the old tubules newly formed connective tissue was abundant; infiltration of large groups of small round cells were seen frequently—acute exacerbation of a chronic glomerulonephritis.

Section of the liver showed a moderate degree of central atrophy and there was some parenchymatous degeneration.

With these marked anatomical changes

there is little wonder that our insulin therapy was of so little avail in reestablishing a reasonably normal functioning of the organs. The odds were too great for recovery.

G. C., age 57 years, entered the hospital suffering with beginning gangrene of the first and second toes of the left foot. About a week before he had noticed an inflammation between the toes which failed to heal readily. Then the toes began to turn dark red and he came at once for treatment in the hospital. Here his urine was found heavily loaded with sugar and the sugar content of the blood amounted to 0.40 per cent.

There was no acetonuria. As the patient's condition appeared good he was placed on a diet containing 17 gms. of carbohydrates furnishing 819 calories. He remained on this diet for five days with no appreciable effect on the glycosuria or glycaemia, although his general condition remained very good until the latter part of the fifth day when he complained bitterly of pain in the affected foot. No further attempts were made to clear up his urine by diet alone. On a diet of 61 gm. of carbohydrates insulin treatment was instituted the morning of the sixth day. Forty-five units in three doses did not change the picture. The morning of the seventh day the blood sugar showed 0.40 per cent but fell to 0.21 per cent at 9 P. M. after 90 units of insulin had been administered in three doses. The eighth day revealed the gangrenous process advancing rapidly up the leg. Morning blood sugar 0.32 per cent falling during the day to 0.22 per cent, with 80 units of insulin. The patient was unable to urinate and a catheter had to be resorted to during the remainder of his illness. On the ninth day his morning blood sugar amounted to 0.23 per cent but the urinary sugar had diminished to a faint trace and by night had disappeared. No acetone or diacetic acid in his urine. The gangrenous process seemed to have stopped just below his knee and the limb was amputated above the knee. Fluids were given

copiously. One hundred units of insulin were used during the day which caused a reduction of the blood sugar to 0.18 per cent. The patient rallied enough after the operation to drink water and nourishment. His urine during the preceding 24 hours, in spite of large quantities of fluids, only amounted to 520 cc. At 10:30 P. M. on this day the patient died.

All the cases of gangrene did not result so unfortunately.

Mrs. L., age 51, came to the hospital with the forefinger of the right hand a dark purple, the tip of the little finger in a similar condition. The whole left hand to the wrist was slightly dusky colored and markedly cold; nearly icy to the touch. Blood sugar 0.20 per cent; urine large quantity of sugar. No time was wasted in testing diets. The patient received a diet of 15 gm. carbohydrates, 25 units of insulin being injected to control the hyperglycaemia. Her reaction was prompt and quite satisfactory. The hand and little finger cleared up entirely, the gangrene of the forefinger stopped at the middle of the second phalanx, amputation of the member at the second joint performed and healing by primary intention took place. At the onset it appeared the woman would lose her left hand above the wrist. With prompt control of the hyperglycaemia the circulation of the hand returned and only two joints of one finger were lost.

Similarly as fortunate was patient J. F. K., although his course was somewhat stormy. He entered the hospital with a perforating ulcer on the sole of the right foot with considerable amount of swelling and redness, but not enough to account for the great pain with which he complained. A beginning gangrene was suspected. On a diet containing 9 gms. of carbohydrates furnishing 2290 calories, he was given 90 units of insulin a day in three doses. The entire foot and ankle turned a dusky red, the deep color extending to about six inches above the ankle. No pulsations in the dorsalis pedis could be felt. The urine remained heavily laden with sugar and the

blood sugar rose from 0.15 to 0.24 per cent. With the increase in the hyperglycaemia, the insulin was increased until the patient received 110 units daily. On this amount the urine sugar began to decrease and areas of normal colored skin appeared in the foot and ankle.

All of his toes however, turned black, a patch on the inner surface of the foot, a large patch on the dorsum of the foot and a patch above the ankle on the leg also turned black. These areas sloughed and all of his toes had to be removed. As the gangrene ceased advancing the blood sugar receded and with it the dose of insulin was decreased until it required only 25 units of insulin once daily to keep him sugar free with a blood sugar of 0.11 to 0.14 per cent. A fairly good foot was saved for him to walk about on.

In comparing these cases of gangrene it appears that the immediate use of insulin gives more hope to a person suffering with diabetic gangrene than any method of dieting to reduce the hyperglycaemia. To delay the use of insulin a day in such an extremity may mean greater destruction of tissue by the advance of a deadly process.

A rather peculiar complication of diabetes mellitus was seen in Patient R. P. A. His diabetes of two years standing had been readily controlled with 25 units of insulin and he had returned to work. The improved state of his health caused him to grow very careless with his diet. Between meals he indulged in many oranges and apples and grew careless in taking the insulin regularly. Attacks of anorexia, nausea, vomiting, prostration, and weakness kept him from work. He suffered a very severe, boring, aching pain over the right forehead and right eye. Very shortly he could not raise his right eyelid and the conjunctiva became inflamed. In this condition he returned to the hospital.

R. P. A. could not raise the right eyelid, and he was unable to move the eyeball. His blood sugar showed 0.17 per cent. On his former diet and dose of insulin the con-

blood sugar returned to normal and urine became sugar free. The only other complicating feature of his case was his arteries. These were easily palpable and the tortuous brachials could be easily seen. The radials were not pipestem in character by any means. The blood pressure registered systolic 164, diastolic 70. Coincident with the improvement of the diabetes, the condition in the eye improved. He is able to raise his lid almost completely and can move the eyeball outward excellently and inward well beyond the midline but not as easily as the left eye. Cerebrospinal fluid was quite negative in his case.

The most difficult complication of diabetes to handle was a woman, Mrs. J. W. C., who was suffering with a cholecystitis. For several months she had suffered with nervous exhaustion, weakness, lack of strength and energy. She had had her twelve remaining teeth removed a few weeks before entering the hospital. Before starting to the hospital a persistent nausea distressed her and on arrival a persistent vomiting developed. On examination of the abdomen, there was an area of marked tenderness, above the umbilicus and to the right of the midline. It extended to the right costal margin, and the muscles were held very rigid. Moderate pressure elicited great pain. The patient could retain nothing in her stomach. She was drowsy a great deal of the time, but could be roused easily. The blood sugar reached 0.36 per cent, and urine showed a heavy reaction for glucose.

Insulin was begun at once, each dose being followed by orange juice which was promptly vomited. Glucose solutions were given intravenously for fear of producing a reaction from the insulin, as the patient had been vomiting everything for a week. The remedy reduced the blood sugar and urine sugar steadily, but each dose was followed by glucose intravenously or feeding with the stomach tube, for we learned that after a thorough gastric lavage her stomach would retain one meal.

Thus encouraged the next dose would be followed by a meal as usual and the pa-

dition rapidly began to improve. The patient would promptly vomit it. Such an accident did not cheer us much, since she had received thirty units of insulin previously. But the gastric lavage was persisted in and gradually she succeeded in retaining her food fairly regularly. At this stage her daily urine output dropped rapidly until one day only 240 cc of urine were excreted. It contained a very large quantity of albumen. The blood showed non-protein-nitrogen 100 gm., urea 47 gm., creatinine 5 mgm. Ninety units of insulin daily were required to control the hyperglycaemia. We still persisted in our efforts, washing the stomach three and four times daily, using the Murphy drip and even injecting fluid under the skin. The urinary output increased, the albumen disappeared, non-protein-nitrogen, urea and creatinine returned to normal, nausea and vomiting ceased and the patient began to sit up and notice her surroundings. She then realized that she had been in a daze for two months. The period of vomiting lasted three weeks. Her abdominal tenderness diminished and she was able to return to her home to resume her daily duties, much encouraged by a return of her former strength and energy. She now controls a diet of carbohydrates 44 gms., protein 36 gm., fats 106 gms. very easily with 30 units of insulin, one-third of the amount necessary to hold in check the glycosuria when her diet consisted of just a few hundred cc of orange juice or glucose solution. In spite of advice, she refused operation to relieve her gall bladder condition. There is still some tenderness there and another flare up may be expected.

The question was asked me recently if a diabetic patient would not show a positive Wassermann reaction. Of the forty-five cases observed a Wasserman test was made on each one and only three were positive. Of these three, two had open lesions—old ulcers—which remained sluggish even after the urine was sugar free, but which showed remarkably active healing when specific treatment was instituted.

The third patient was a boy of twelve with no open lesions, but his general condition seemed to improve rapidly with combined diabetic and specific treatment.

In describing the preceding cases, I have only related the important points regarding the diabetes and insulin treatment. All cases which come under my care are given a thorough physical examination, a careful history taken, complete blood, urine and Wassermann tests are made. Every sample of urine passed is tested for sugar. All insulin treatments are controlled by repeated blood sugar examinations daily. The diets are made out according to requirements as based on the age, sex, height, and ideal weight of the individual. Woodyatt's formula is used to compute the proper proportions of carbohydrates, protein and fats to maintain a ration of fatty acids to glucose as 1.5 is to 1.

From my experiences with the complications of diabetes mellitus, I believe that *prompt* use of insulin carefully checked by blood sugar determinations offers the greatest hope for life and limb. I would not hesitate even in cases of the slightest skin infection to clear the urine of sugar at the earliest possible moment, using insulin at the very start. Recall the unfortunate outcome of G. C. in whose case a few days delay took place before using insulin. On the other hand J. S. A., whose infection was almost identical with G. C.'s, is trotting about in apparent good health. No delay occurred in instituting his treatment. With care no harm can be done and why take chances of being too late.

That intercurrent infection decreases the carbohydrate tolerance is well shown by the enormous doses of insulin necessary to decrease the glycosuria in the cases reported during the height of the infectious process and the subsequent lowering of the quantity required as the condition subsides. To be sure, one does not expect the insulin to restore to normal degenerated tissues or to repair those permanently injured by other disease processes, as indicated in the case of F. W. In fact, the insulin alone

cannot overcome an infection or repair pathological changes of any kind. The distorted metabolism resulting from diabetes depresses, hampers, or impairs in some way the natural protective agencies of the body, thus removing normal restrictions to destructive processes. Insulin assists in restoring the distorted metabolism and in this way enables the natural protective agencies to resume their activities to the benefit of the whole organism.

#### DISCUSSION

DR. LEON T. STEM, Chattanooga: I have been much interested in the treatment of diabetes, especially since insulin came into vogue. I have a patient with a combination of diabetes and nephritis who has lost seventy pounds in a year, and had urine free from acetone. There was 280 mg. of sugar to 200 c.c. of urine. He also had a partial tuberculosis, but was running a normal pulse rate and temperature. He was very weak and nervous. We are now giving him twenty units of insulin three times a day and all the food we are able to give. Monday morning his blood sugar was 150 mg. to 100 c.c. of blood. His urine became sugar free the fourth day after we got him into the hospital. He has gained about four pounds in ten days and is doing nicely.

The thing that I have had the most trouble with has been the recent nephritic cases. It is a puzzle to know how to handle them, for the renal threshold seems to be so much lower than in other cases. I wish Dr. DeSautelle would tell us about these cases.

I also have a colored woman now who came in with an abscess on her foot and consulted a friend of mine. He found the urine loaded with sugar; she had 2.5 per cent in the urine, had diacetic acid and acetone, and 260 mg. of sugar to 200 c.c. of urine. The abscess extended up to the instep and broke through between three of her toes. She has been under treatment for three months. The wound in the foot is now almost healed under antiseptic irrigation, the urine is sugar free, the blood sugar I do not know about. She is not in the hospital and there has been only one blood sugar test made. The wound is practically healed; although she has some pain in the toes, there is no sign of gangrene at present.

DR. C. J. CARMICHAEL, Knoxville: What Dr. DeSautelle has said is of equal importance to the surgeon and the internist. He has told us that these acute conditions are really becoming a question of life and death, and with all the glory and all the benefit that has gone to the medical profession and the diabetic with this insulin, there are some clouds over the horizon. The problem is not solved, as the literature would make us believe.

I think one of the most unfortunate things that has ever been done was to put out the routine dietary tables, because it induces the average man to attempt the treatment of diabetes. The problem is so complex, even though it become routine to the man who is treating it all the time, that the average man should not attempt it at all. The paper of Dr. DeSautelle should teach us to put our diabetics in the hands of the man who is thoroughly equipped to treat them, just as we should not put them in the hands of the man who is not equipped to carry out scientific procedures. It requires almost a daily blood sugar analysis.

A school teacher came in with only loss of "pep" associated with urinary sugar of 8.3 per cent and a high blood sugar lab. report .6. The patient is now potentially in diabetic coma. It is only by placing these patients in the hospital where they can be properly cared for that we can hope for results. I am not attempting to treat diabetic patients myself. If you knew the time necessary and the great detail necessary in these cases you would make no attempt to treat them yourselves, and still patients are now trying to carry out their own treatment. They read the newspaper and think the family doctor can get insulin for them, and the consequence is that they have all the complications Dr. DeSautelle reported before they receive any treatment at all.

DR. JOSEPH J. WALLER, Oliver Springs: I wish to stress the importance of a thorough diagnosis before we tackle any insulin treatment. From 60 to 80 per cent of all diabetics are more or less fat. A man came in to see me who wanted a thorough examination, and in my routine way I tackled the proposition and among other things soon discovered that his urine was loaded with sugar. According to the old method of diagnosis I would have readily pronounced him a diabetic. He had a great many symptoms that induced me to suspect that he was a diabetic, but I caught myself in time and told him to come back the next day before breakfast and I would run a blood sugar test. I did that and found the blood and urine both normal.

The thing I wish to stress is that to tackle a patient like that with insulin would be a gross mistake and might result in the death of the patient.

I was glad to hear Dr. DeSautelle say we should not use insulin without frequent blood sugar tests. When you know the patient is a diabetic you can put the urine test in the patient's hands, and he can test his own urine every day. It is not necessary that all cases should go to the hospital. Many patients are not so situated financially that they can take up their residence in the hospital and must have home treatment. Not long ago I had a case that absolutely needed hospital treatment. I referred that patient to a man here in Knoxville who was capable of providing this, and

I understand that he will have to use insulin the rest of his life.

While you are making the general examination you can estimate the urine sugar, and then it can be kept up every day by Benedict's solution, and you can keep track of it in that way. I think the average case does not need a blood sugar test more often than once a month.

The point I wish to make is that we should not treat any case as diabetes until we know that it really is diabetes.

DR. W. T. DESAUTELLE, Knoxville (closing): So far as the nephritics are concerned, the only one we are sure had true nephritis was the one we did the autopsy on. In the others we found that the apparent kidney complication disappeared with control of the sugar. In one instance the urinary output dropped to 240 c.c. in twenty-four hours in spite of water intravenously. There were a considerable number of casts, but we did not pay much attention to this and kept on treating the diabetes. I am sure the majority do not have nephritis because the albumen and casts disappear as the sugar clears up.

Of course, in my short paper I did not attempt to tell you anything about how to handle the cases. I just wished you to know that after we had a series of cases and studied them in detail the general impression was different after seeing the actual results. After I had done this with

the cases of diabetes with the infection I was at once impressed with the necessity of beginning the insulin treatment in patients with infection the moment they are seen. Those patients whose treatment was delayed lost their legs and so on, and I think it did not pay to wait.

So far as the blood sugar is concerned, whenever we began to give insulin in the hospital the patient has four blood sugars a day. That is to watch the insulin and be sure we do not give too much. It is absolutely ridiculous for patients to try to treat themselves. Of course, we do not think of giving the ordinary diabetic this treatment. The diet is estimated according to their age and weight and sex; they are put on a low carbohydrate diet and then their blood sugar is determined. If this amount of food proves sufficient to hold their weight and strength we do not give them insulin. If they remain sugar free with good strength and energy and with the weight normal they do not need it. ,

So far as diet is concerned, the diabetic diet is not difficult, and in Knoxville we have on'y had one real dietician. It then devolves upon the doctor to study out these diets and give them to the nurse in the diet kitchen. I think the doctor who is looking after these patients should be as familiar with the diets as the dietician, for it is well to check even a first-class dietician every now and then and see that they are giving the proper amounts and kinds of food.

# THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 420 Jackson Bldg., Nashville, Tenn.

J. F. GALLAGHER, M.D. -----Editor

R. C. DERIVAUX, M.D. -----Associate Editor

JUNE, 1924

## LEGISLATION

The members of our state legislature will be elected in the near future and will convene on the first Monday in January, 1925. While the candidates are campaigning they are in a much more receptive frame of mind as to the needs and desires of their would-be constituents than after they are elected. Now is the time for the component county societies to get some expression from the various candidates on matters vital to organized medicine. The medical profession of the state seems to hold the following matters essential. There may be other issues, but these are paramount: First, that the present medical practice act be retained on the statute books just as it is at present. It is a model of its kind and is functioning admirably. All of those who have given thoughtful consideration to the scarcity of physicians in rural communities are agreed that this condition will not be ameliorated by the lowering of standards. Second, that the Workman's Compensation Act be so amended as to allow of a more elastic fee schedule. The present law allows only one hundred dollars as a maximum for an injury of whatever magnitude, or medical attention over whatever length of time. Third, the penalty for practicing medicine without a license or the violation of the medical practice act should be such as to effectually enforce the act. The present penalty of a fine of \$25.00 will not prevent the quack from plying his nefarious trade.

There can be question that if the societies will take these and other matters up with the candidates in their respective communities much good can be accomplished.

It will make the work of the Legislative Committee much easier. And it may be said in passing that this committee does more work and gets less credit for it than any two committees of the Association. The story is told of a little boy doing some work and a passer-by asked what he was getting for it. The little boy replied: "Mister, I'll get nothing if I do, but I'll get h—I if I don't." That well illustrates the work of the Legislative Committee. Do some missionary work with your representative before he gets to Nashville.

## PRESIDENT-ELECT HAGGARD

The election of Dr. W. D. Haggard of Nashville as president-elect of the American Medical Association is a source of much gratification to the members of the Tennessee State Medical Association. Dr. Haggard has always taken a keen interest in medical organization and his elevation to the highest office within the gift of the medical profession of the United States is an honor worthily bestowed. He is too well known in this, his native state, to recount his many achievements both in the profession and out of it at this time. This is written to extend congratulations on the part of the Association; albeit this has already been done in telegrams to Dr. Haggard on the day of his election, both by the President and Secretary of the State Association. The election of the distinguished Nashville surgeon could not be better summed up than the closing paragraph of comment on the event which appeared in the Journal of the A. M. A. of June 21. It states: "His election may be considered a recognition of medicine in the South, of his service in the advancement of medical education, and of the qualities of leadership and congeniality which he possesses."

## FACTS

Why do these conditions exist and what is the remedy? In Tennessee there are ninety-six counties, but only sixty-seven are organized. There are 3,228 physicians listed in the eighth edition of the Directory

of the A. M. A. and only 1,171 members of the State Society. While the membership increased in 1924 over 1913, 157 physicians, yet the proportion of non-members is entirely too large. The appalling fact is that there are only 678 Fellows of the American Medical Association in this State! What is the answer?

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## DEATHS

### DEATHS

Dr. F. G. Hudson, one of the oldest residents of Benton County, died at his home in Camden on June 9th, aged 89.

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Dr. C. L. Hackworth died May 23 at an infirmary in Chattanooga, aged 54. He was buried at his home in South Pittsburg. Dr. Hackworth was a graduate of the Chattanooga Medical College and a member of the Marion County Medical Society.

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Dr. James A. North died at his home in Franklin, Tenn., on May 31, in the 86th year of his age. Dr. North was assistant surgeon in the Confederate Army. Before retiring from active practice he was located at West Harpeth, Williamson County.

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Dr. Finis E. Wyatt died at Yorkville on May 18. Dr. Wyatt graduated from the Medical Department of the University of Nashville in 1896 and was a member of the Gibson County Medical Society.

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Dr. Albert E. Lea, a member of the McMinn County Medical Society, died at his home in Athens, Tenn., the latter part of April. Appropriate resolutions were adopted by the society and copies furnished the local press for publication.

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## MEDICAL NEWS AND NOTES

Dr. Hugh Kincaid, of Knoxville, has moved to Atlanta, Ga.

Dr. A. P. Bush, of Memphis, has moved to Columbia, Tenn., to locate.

Knoxville is exerting every effort to obtain the proposed Baptist Hospital for East Tennessee.

Dr. J. R. Fowlkes, of Greenfield, was run down by an automobile May 28, sustaining a broken leg.

Dr. George K. Carpenter succeeded Dr. W. B. Sugg as resident at the Nashville General Hospital, June 1.

Dr. J. Q. A. West will leave Knoxville July 1 for London and Paris. While abroad Dr. West will do special work in Proctology.

Dr. L. T. Stem and Dr. C. A. Skelton, of Chattanooga, are taking a special course in internal medicine at the Presbyterian Hospital, New York.

The doctors of Knox County have organized a doctors' club. A splendid location has been secured in the Doctors' Building, and reading rooms, rest rooms, etc., will be provided.

Dr. Herman Spitz, of Nashville, was elected chairman of the executive committee of the American Association of Clinical Pathologists at its recent meeting in Rochester, Minn.

Sentiments of sympathy are extended to Dr. J. A. McIntosh on account of the death of his wife, June 4. Dr. McIntosh is editor of that splendid publication, The Memphis Medical Journal.

Dr. S. T. Woodruff, who has practiced at Springfield for the past six years, has moved to Nashville where he will specialize in diseases of children.

Dr. W. Scott Farmer, of Nashville, visited Dr. R. E. Lee Smith recently at the Eastern State Hospital at Bearden. They both attended the American Psychiatric Association at Atlantic City.

Dr. J. R. Harris has been succeeded as director of the Montgomery County Health Unit by Dr. W. S. Nichols. Dr. Harris has gone to Memphis where he has effected an affiliation with the Willis C. Campbell Clinic.

Dr. P. D. Biddle, of Columbia, Tenn., has removed to Brewster, Fla., to locate. Dr. Biddle had practiced continuously in Columbia since his graduation from the Medical Department of the University of Nashville in 1905, with the exception of the time he spent overseas during the World War and a year spent at Tulane doing post-graduate work.

We nominate the following for a place in that well-known movie diversion called "Fun From the Press." It is reproduced as exact as our type will permit and as it appeared in one of the East Tennessee papers. The names are omitted, of course.

### DOCTORS ATTEMPT MIRACLE OPERATION THIS AFTERNOON

Four physicians are this afternoon attempting a miracle operation.

By amputating both of her limbs they will attempt to save the life of Mrs. —, well-known local woman, whose body has been dying by inches from gangrene for the past few months.

Prayers of friends and relatives will go up from many anxious hearts this afternoon, asking that Fate be checkmated and her life be spared.

Doctors —— and —— and Dr. ——, who is an uncle of Mrs. ——, and a Knoxville specialist, are attempting to reclaim the victim of a disease which is gradually killing her whole body.

Mrs. —— is a widow and the mother of three children. She was paralyzed four years ago and has been in ill health ever since that time.

**The operation on Mrs. —— was completed just as the News Goes to press. Mrs. —— is reported as resting easy, having stood the operation remarkably well.**

Mrs. —— is the widow of the late W. H. ——, for several years superintendent of the —— Hosiery Mill. She was well known here and was active in church work. She has many friends in —— who are deeply interested in her speedy recovery.

## MISCELLANEOUS

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### A SIMPLE METHOD OF PRESCRIBING DIABETIC DIETS

George Baehr, Herman Lande and Lulu G. Graves, New York (Journal A. M. A., May 10, 1924), offer a series of twelve test diets devised for the general practitioner in medicine, to assist him to prescribe accurate diabetic diets without the use of mathematical formulas. With its aid, the physician should be able to prescribe well-balanced diets of known food value and immediately write out the menus for three meals a day with the accuracy of a trained dietitian. In preparing this table the authors have modified the one of Joslin so as to make it conform to the present-day needs of the high fat, low protein diets for patients with diabetes. They therefore preserve a proper antiketogenic balance. They contain a constant minimum amount of protein and a moderately large amount of fat. The carbohydrate foods are in one group and the protein and fat in another. This makes it possible to increase the carbohydrate foods in each succeeding test diet, whereas the quantities of protein and fat remain practically constant. The fat is reduced in the higher diets only in order to keep the total food values below the needs of the individual, and so maintain a moderate undernutrition during the test period. The twelve diets are called test diets, for they are designed to be used only during the first week or two, in order to eliminate the patient's glycosuria, reduce his blood sugar to a more normal level, and then test his maximum glucose burning ability. After this has been accomplished, the diet is increased in accordance with certain rules, this final, more adequate diet being called the permanent maintenance diet.

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### THE HEART IN PREGNANCY

The generally accepted incidence of heart disease in pregnancy is about 1 per cent. The series of reviewed cases by Phil A. Daly, Chicago (Journal A. M. A., May 3,

1924), represents about 0.25 per cent of all patients delivered in the obstetric clinics of the Chicago Lying-In Hospital and Dispensary, during two years. Only those of the first two years are included because they have all been observed for at least six months subsequent to completion of pregnancy, the duration of observation in others ranging up to two and one-half years, some into a second pregnancy. There was a predominance of mitral lesions: forty-two cases of mitral stenosis and forty-eight cases of mitral regurgitation in a total of 117 cases. Systolic murmurs were detected at some time or other in fully 70 per cent of the women examined, but for the most part were unaccompanied by other signs of disease, and are considered as being of no significance. The diagnosis of chronic myocarditis or chronic myocardial insufficiency is based chiefly on the subjective symptoms of the patient, supported by evidence of some degree of enlargement of the heart and, usually, a somewhat elevated blood pressure. A summary of results shows 117 cases of heart disease from a total of 4,040 patients delivered at the hospital and through the dispensaries. In this series of 117 cases there occurred one death, one interruption and nineteen failures (ten partial and nine complete). The death occurred in a patient with mitral stenosis who was delivered by Caesarean section under local anesthesia, suffered an acute suppression of urine, and died with uremic symptoms in about forty-eight hours. The patient whose pregnancy was interrupted also had severe mitral stenosis, passed through one pregnancy successfully, and was delivered by Caesarean section and sterilized, but subsequently became pregnant, and the second pregnancy was interrupted as soon as discovered. Seven patients were delivered by Caesarean section; all others were delivered from below. Of the nineteen failures (16 per cent), thirteen failed during pregnancy, recovered, carried

their pregnancy to completion and had no further trouble, labor and delivery causing no serious embarrassment. Five failed during both pregnancy and labor, and only one suffered any undue embarrassment during labor alone. Five instances of auricular fibrillation occurred, four of which returned to normal rhythm; one persists. There have been numerically more failures among the mitral stenosis, but the percentage among the aortic insufficiencies has been almost the same. Of these failures, fifteen patients have recovered completely and four have not, so that, in a final analysis, a series of 117 patients shows a death rate of less than 1 per cent, and less than 3.5 per cent of incomplete recoveries, while 96 per cent have recovered completely as far as clinical observation for this length of time can demonstrate. It is evident from this work that nearly every woman with organic heart disease, regardless of lesion, can carry through pregnancy successfully. Interruption to save life or prevent cardiac failure is rarely necessary. Failure, complete or partial, can with rare exceptions be compensated, and pregnancy continued. Abortion or delivery in the presence of failure, unless the patient is already in labor, is unwise, because anything that is done is an insult to the already overwhelmed heart muscle. There is no material cardiac damage incurred by pregnancy—i. e., after completion of the pregnancy, the heart is as efficient as it was at the beginning. Prevention of trouble is accomplished early in pregnancy, not at term, during labor or delivery. Delivery from below; after spontaneous labor, with ether anesthesia, affords the easiest and best means of terminating labor in those patients who have no unfavorable obstetric complications.

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#### VISUALIZATION OF THE GALL-BLADDER BY THE SODIUM SALT OF TETRABROMPHENOL-PHTHALEIN

For the production of roentgen-ray shadows of the gall-bladder, Evarts A. Graham, Warren H. Cole, and Glover H. Copher, St.

Louis (Journal A. M. A., May 31, 1924), use the sodium salt of tetrabromphenolphthalein instead of the calcium salt, injecting from 35 to 40 c.c. of the solution instead of 350 c.c. required by the calcium salt. It is much more stable, and is not crystallized out by sterilization. All that is necessary to do is to dissolve 5 or 5.5 gm. of the crystalline salt by heating in 40 c.c. of distilled water, and sterilize in a boiling water bath for fifteen or twenty minutes. The solution is given intravenously, preferably in two doses. The injection should be given in the morning between 7:30 and 9:30 with a syringe, in divided doses as stated, after the solution is warmed to body temperature. The dose should be reduced for patients weighing less than 115 pounds (52 kg.). Great care should be taken not to allow extravasation of the solution outside the vein, on account of the danger of necrosis. To obviate this danger, the authors recommend dilution of the solution up to 40 c.c. and insertion of the needle independent of the syringe, thus allowing a free flow of blood before the solution is injected. A few cubic centimeters of sterile physiologic sodium chlorid solution should be injected after the dye to prevent leakage of the solution through the vein wall or needle. The authors call attention especially to the omission of breakfast and lunch, since this seems to be of great importance. A normal gall-bladder will begin to cast a shadow from three and one-half to five hours after the injection; will show a tendency to change in size; will cast its heaviest shadow between sixteen and twenty-four hours, and empty in about forty-eight hours. The shadow shown on the four or eight hour plate is almost invariably larger than the subsequent shadows. So far, all gall-bladders that failed to show this "elasticity or distensibility" at some time during the series, when the injection was followed by the routine given above, have been found to be pathologic at operation, or to give definite clinical findings of gall-bladder disease. Pathologic gall-bladders do not cast as heavy a shadow

as normal ones, since the production of the shadow is dependent on the concentration power, which may be partially or completely destroyed by disease. In four cases in which the routine order was followed, the gall-bladder failed to cast a shadow. All of these patients were operated on. Two had a stone occluding the cystic duct; one had a gall-bladder so scarred and contracted by disease that it was too small to cast a shadow. The fourth patient had an appendical abscess containing a considerable amount of pus; on account of the abscess, the gall-bladder region was not explored,

and the amount of pathologic change, if any, could not be determined. In all patients with cholelithiasis in which the cystic duct was not occluded, the stones have appeared as either negative or positive shadows, but only after the injection of the dye. The size, shape and density of the roentgen-ray shadows of the gall-bladder have been variable, and will undoubtedly prove to be important factors in diagnosis. It is most important, as in gastro-intestinal examination by roentgen ray, that a series of plates be obtained.

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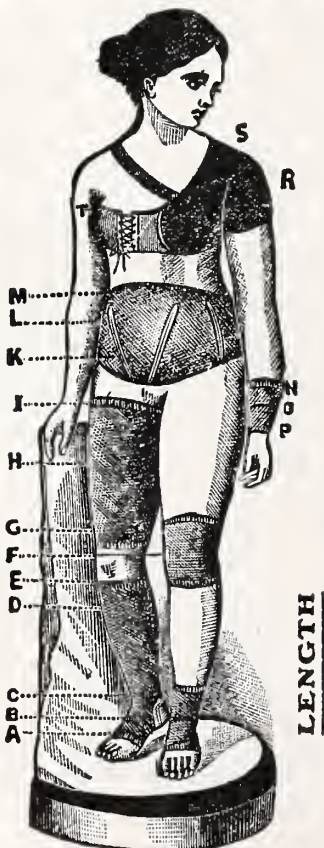
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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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## PEPTIC ULCER\*

C. J. CARMICHAEL, M.D., Knoxville

AN unknown or unsolved feature of any medical or surgical subject is an incentive to research and consideration of all thinking men. The problem once solved and generally known becomes a routine procedure. Theories may lead to solution of many of our unsolved medical problems, but has up to the present failed us in peptic ulcer.

Internists and surgeons may be fairly agreed upon diagnosis of the condition and to a degree upon treatment, but neither group has produced much from standpoint of etiology. If all ulcer patients might have a Carmen to diagnose, a Sippy or a Mayo to treat, then all might be well, but this is impossible.

*Etiology.*—The fact that no single theory thus far advanced has been accepted by any large group of men is evidence that the cause is yet unproven.

(1) Hyperacidity, (2) trauma, (3) embolism, (4) sclerosis, (5) anemia, (6) infection, and a host of other conditions have been advanced theoretically as causative factors in ulcer.

(1) Recently a dispute has been raised as to whether hyperacidity is a cause or effect. Ewald, Lenhartz and others have

claimed that ulcer can exist in presence of anacidity. All observers have noted at times an acidity near normal values, but my own observation has been that these same cases at other times show a hyperacidity. A general rule of increased H.Cl. in peptic ulcer I believe entirely tenable.

(2) Trauma, either mechanical or chemical, suggests many potent possibilities and has been a subject for theoretical argument, as a causative factor, but so far has not added to our knowledge of the subject.

(3) Embolism and auto digestion of the gastric mucosa by enzymes of gastric juice in presence of H.Cl. is a very fascinating theory and is a very reasonable explanation of all that occurs, but loses its possible importance because of its improbable occurrence. If we are, as has been claimed, diagnosing peptic ulcer in 1.3 per cent of our population, it would seem unreasonable to think all of these due to embolism, when it occurs so infrequently in other parts of the body.

(4) Sclerosis of vessels has been claimed present in as high as 48.8 per cent of cases. This is contrary to observation of most workers in this field, because the majority of ulcers occur in young people who show no sclerosis. It might be a factor in aged, but hardly conforms to the clinical findings in the majority of ulcer cases.

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

(5) Anemia, along with increased H.Cl., has always and yet presents much to be considered from the etiological viewpoint. Theoretically it stands out as an important factor and clinically ulcer often develops subsequent to some infection or prolonged illness, which has rendered the patient anemic. Furthermore, a blood examination reveals that most of our ulcer cases reveal a fair degree of anemia which must be reckoned with in our treatment, either surgical or medical.

(6) Infection, at present, seems to be the high light in the picture of this subject. In 1916, Rosenow advanced his theory of hematogenous bacterial invasion and selective affinity. Since that time much has been said for and against the theory. This theory is not a debatable subject for this paper, but to the writer it has always seemed strange that streptococci would be set free in the circulation and lodge in a gastric vessel, without a few of the colony remaining free in the blood current and producing clinical evidence of bacteremia change in the chemistry of the blood, which

Finally, I venture the theory that a change in the chemistry of the blood, which may result from any one of a number of conditions, lessens or prevents the formation of an unknown anti-digestant, thus permitting the gastric enzymes in presence of hyperacidity to digest its own mucosa.

A study of the chemistry of the blood in cases of ulcer might be productive.

*Diagnosis*—Here proper credit should be given surgery which has given us the proof of our clinical diagnosis based upon symptomatology. Without the surgeon's work in this field the diagnosis might still be doubted and as uncertain as the etiology. Formerly, 96 per cent of ulcers were thought to be gastric; surgery has proven that 75 per cent are duodenal and 25 per cent are gastric.

Our diagnosis at present is based upon (1) history; (2) physical examination and chemical analysis; (3) x-ray findings with the application of our knowledge of ulcer pathology.

Given the classical symptoms of ulcer, the diagnosis should be easy, but Bassler states that these are present in only one case in four. By very careful and intensive study two of the other three may be diagnosed and the remaining one, or 25 per cent, are diagnosed only as a result of some complication. Thus we see that only 25 per cent of our cases show typical histories and symptoms. This makes the diagnosis of peptic ulcer one of the most difficult problems with which we are confronted. We must remember that excoriations, abrasions, superficial ulcerations incapable of diagnosis, undoubtedly occur and heal spontaneously.

Undoubtedly the most important single factor, outside the findings of an expert radiologist, which few of us can have, is a carefully taken history. We may obtain a history of the classical symptoms, viz.:

No pain when stomach is empty; no pain while eating or immediately afterward; distress and pain coming one and one-half hours to three hours after eating, and relieved by emptying of the stomach, to recur in usual time after eating again, and being relieved by taking alkalies. These symptoms may be found in either gastric or duodenal ulcers, and are fairly characteristic of a typical case; if added to this we have vomiting blood, the case is clear. But not all cases show as clear cut symptomatology.

One group of cases suffer distress all the time, due to pyloric obstruction and hypersecretion and retention of acid contents; another group will have their symptoms only in the afternoon, two or three hours after dinner; still another group will have symptoms only at night, between midnight and daylight. When this condition exists we usually find the patient relieved by taking of soda bicarbonate or a glass of milk, which combines with free acid; or perhaps vomits and obtains relief. In such cases, of course, we clinically suspect obstruction at the pylorus and determine same by passing a tube and finding considerable quantity of gastric juice in the stomach. It is well to remember that in a case we have these

symptoms of obstruction, we are dealing with ulcer on the duodenal side.

All degrees of severity and mildness of symptomatology, from that just described even to the occasional gastric distress, are met with in these cases. In some patients vomiting is a prominent symptom, particularly if the ulcer has produced obstruction. In others we obtain a history of no nausea nor vomiting; other patients give a history of hematemesis. In my own patients I find a history of blood in the vomitus of very infrequent occurrence.

The one symptom which attracts most attention is that of the gastric distress or pain, and it varies in degrees and intensity. At times a mere distress in the epigastrium; at other times an intense pain requiring the emptying of stomach, or hypodermic of morphine for its relief.

Sippy says of distress:

(1) It is absent when the stomach is normally empty. (The normal fasting stomach contains from 5 to 50 cc. of digestive juice, total acidity approximately 30; free acidity 18.)

(2) It appears an appreciable time after eating.

(3 ) It is relieved by taking food.

(4) It is relieved by taking alkalis.

(5) It is associated with adequate free H.Cl.

In a given case under observation for diagnosis, distress that does not conform to these clinical facts, is seldom attributable to ulcer. Much has been said as to the cause of this distress in ulcer. It seems that for all time excessive H.Cl. has been censured. The blame has not been removed from this agent yet, notwithstanding the efforts of able physiologists who claim that peristalsis, pylorospasm, and intragastric tension are the factors of primary importance in production of symptoms and perhaps in the chronicity of peptic ulcer.

Intragastric tension and pylorospasm can hardly apply to this distress of duodenal ulcer, which is twin brother to gastric ulcer. Controversy still rages over

this question, and any evidence of value must be proven. The fact that the greatest pain in peptic ulcer makes its appearance at night, when there is little or no food in the stomach, but usually from 100 to 500 cc. fluid juices high in free H.Cl., would indicate the irritation was not mechanical, but in fluid contents of the stomach.

As already stated, so long as such problems remain unsolved, this subject will attract research workers and clinical investigation.

A knowledge of ulcer pathology is essential for all workers in this field. The clinician can not interpret and correlate symptoms without it. The x-ray man can not interpret without an understanding of it, and certainly the surgeon is lost without this knowledge. The symptomatology of the 75 per cent ulcers not presenting classical symptoms require intensive study and this returns us to the statement that the most careful painstaking history and subsequent confirmation of all statements made by patient is essential.

If this is done then we can come very close to a reliable opinion. Within recent years I have found it increasingly difficult to obtain the real facts by routine history taking. So many patients complaining of stomach symptoms when questioned closely show a surprising inaccuracy in their narration in spite of repeated questioning, that I have recently adopted the plan of hospitalizing them for a period of observation and having the nurse chart their symptoms as they occur. Thus I find that the patient who claimed pain comes on soon after eating, has pain 1½ to 3 hours after eating; some of those who claimed distention with gas had no distention. Some who claimed no pain at night, would be awakened in the early morning hours with hunger pains. They do not intend to deceive, nor be inaccurate, but they are not trained to observe. Many cannot differentiate between a distress, an ache or a pain. This period of observation has been very helpful in making a diagnosis. Also, while in the hospital the exact diet may be known

and charted, also the patient may be put upon a meat free diet for a requested time and the stool tested for occult blood. While living at home this is very difficult, as they eat something they should not and then forget about it.

Remembering and avoiding all the pitfalls into which the patient may lead us, with their subjective symptoms, there are so many maybe's and may not be's, in this subject that we must bring all aids to bear in some cases.

*Physical Examination:* As a general rule this nets a very small percentage in the diagnosis except that it rather definitely rules out other conditions from which peptic ulcer must be differentiated.

In recent years I have been impressed by the high per cent of patients who can locate the ulcer by a point tenderness over the stomach when ulcer actually exists. In examining for point tenderness one must bear in mind at all times that many of these patients have a ptosis and the stomach may not be anywhere near the tender point. It is my custom to do a fractional gastric analysis on all suspected ulcer cases. As a rule we find H.Cl. very definitely increased. However, sometimes we find it borderline that is near normal. These analyses are usually repeated. We pay no attention to small quantities of blood as many cases in which tube is passed will show occult and sometimes microscopic blood.

Over a period of about two years, while doing some gastro-intestinal work for the Government, I made the string test routine. The findings were not often of value, but in a small per cent of cases produced the most valuable evidence obtained in the case.

X-ray diagnosis except in the hands of a very small group of experts, is a frail reed to lean on, as the sole diagnostic support. (Brown, Jour. A. M. A., July, 1922.)

Personally, I rely to a considerable degree upon the x-ray findings, for as in the case of the string test, the x-ray often makes the diagnosis. I feel that more than one set of plates and oftentimes many sets should be made.

We must remember that about 40 per cent of gastric ulcers are on the anterior and posterior walls and only the most expert roentgenologists can demonstrate them. Carmen gets 95.6 per cent positive diagnoses and these have been confirmed at operation. His negative findings, that is in clinically diagnosed ulcer, are 93.1 per cent correct. Such a degree of efficiency is seldom obtained in any field of work and can be approached only when the roentgenologist follows his cases to the operating table.

*Treatment:* Having diagnosed ulcer, what shall be our plan of treatment? The internists maintains that 90 per cent can be cured by the Sippy plan of treatment carried out in detail, carefully supervised by one who is capable. The surgeon claims 90 per cent of cures. So to the public it means pay your money and take your choice. There is much to be said on both sides of the question and after all the mortality must be the final deciding factor in any plan of treatment. The records show a mortality rate of 6 to 8 per cent by the most skilled surgeons in the world, reporting at the Washington Conference in 1922. A death rate of 1 in 13 to 1 in 20 cases is worth considering in deciding upon any plan of treatment. If these figures represent the best we have, what must be the average from all surgeons.

Mayo says: "At the clinic we have removed several hundred unnecessary gastro-enterostomies that had been made in good faith and bad judgment. Fourteen of these were our own cases."

Apropos of this phase of the subject Dr. Sippy (Jour. A. M. A., July, 1922), makes this plea: "Do not sacrifice your patients to men in your particular group." This means select your most skilled surgeons for this work.

The writer feels certain that careful analysis of this subject would reveal that both internists and surgeons fail too often in diagnosis. Too many patients are treated for ulcers who do not have them and conversely too many ulcer cases are un-

diagnosed and untreated, or treated for something else. I do not believe that the cases which are treated medically by the average internist have the benefit of the recognized medical treatment (Sippy plan) in a thoroughly scientific way. Too many undertake to carry out this plan in a general way without attention to details and

persistency, and close supervision which is essential. I doubt if as many mediocre men attempt ulcer surgery as there are internist of same grade attempting medical cures.

Whether the problem be medical or surgical, the future will tell when the etiology is made known.

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## THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS\*

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BENJAMIN I. HARRISON, M.D., Knoxville

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**I**n presenting to you my subject I am fully aware of the fact that you are familiar with the unlimited resources of literature in this field. My desire is to give you in a condensed form the practical points relating to the surgical treatment of gastric and duodenal ulcers.

In addition to a review of recent literature, I have gathered such information for the methods I embody in this paper from my surgical training with Dr. George W. Crile and through personal observations at the leading surgical clinics in the United States and at the teaching centers of Europe. It is, however, impossible to give all these due credit in the short time allotted to individual papers in this symposium.

A consideration of gastric and duodenal ulcers together is proper from the fact that the stomach and duodenum are closely allied embryologically, anatomically and physiologically. Embryologically the stomach and duodenum are formed from the foregut; anatomically they are separated by the pyloric sphincter; physiologically both the stomach and duodenum serve the purpose of preparing food in such a manner that it can be readily absorbed during its passage through the remaining portion of the alimentary canal.

It is of interest to recall the important functions of the stomach.

1. To store food taken at each meal.

2. To secrete digestive ferments acting in an acid medium which it also supplies in the form of free hydrochloric acid.

3. To act as a mechanical mixer, thus saturating the food with the digestive ferments and hydrochloric acid.

4. To grind the food into the proper con-

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\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.  
sistency for the next step in the course of digestion.

The duodenum is an extension of the stomach in which the food is further subjected to a process of digestion, this time in an alkaline medium of bile and pancreatic juice.

In the management of gastric and duodenal ulcers it is of importance to bear in mind these anatomical and physiological facts, because every surgical operation alters to a less or greater degree the normal anatomical relations, and this in turn may result in abnormal physiological conditions.

It is a most logical conclusion that the digestive system of anyone suffering from ulcer of the stomach or duodenum will be in better condition to perform its physiological functions if it can be restored to normal without a surgical procedure. In the very early stages of gastric or duodenal ulcers this is possible in a certain per-

centage of cases, if careful and persistent dietetic, hygienic and medicinal methods are carried out. On the other hand many of these cases do not obtain a permanent cure from this type of treatment, being subject to relapses which ultimately compel them to seek relief through surgical means.

The longer an ulcer remains unhealed the less amenable it is likely to be either to surgical or medical treatment. Furthermore, complicating factors may present themselves, of which, perhaps, perforation is the most disastrous, or hemorrhage, either acute or chronic, emaciation, dense adhesions to the surrounding structures, and in a fairly large number of gastric ulcers, carcinoma may have a beginning. These conditions should be anticipated in order that a surgical procedure may be advantageously carried out.

The technical points of surgery for gastric and duodenal ulcers are only mastered in the operating room. I realize that little can be learned by listening to detailed discourses. There are, however, some fundamental principles, which, if observed will reduce mortality and morbidity. As to the best method of treating gastric and duodenal ulcers by means of surgery, most authorities agree that excision is the operation of choice. This procedure is not always feasible. The location of the ulcer, its size, the extent to which the coats of the viscus are involved, surrounding induration and adhesions, predetermine the course to pursue.

An ulcer, uncomplicated, located in the pyloric region upon the anterior wall, may as a rule be readily excised, and if excision results in a narrowing of the pylorus a gastro-enterostomy should also be made.

If more than one ulcer is present in this area, or if the induration and adhesions with only one ulcer are marked, a pylorectomy should be done. A pylorectomy is a more extensive procedure than simple excision and gastro-enterostomy, and should be used principally in the presence of marked involvement of the pylorus.

If the ulcer occurs in the duodenum and encroaches upon the entrance of the common bile duct, or if it is located on the inner pancreatic portion, a posterior gastro-enterostomy should be made.

An ulcer involving the lesser curvature, if small and not encroaching upon the pylorus, may be excised. In this type of ulcer it is best to close the wound in the opposite direction to which the ulcer was removed. This opposite suturing will prevent a narrowing of the lumen of the stomach at the point of closure.

An ulcer situated on the lesser curvature and encroaching to a great extent upon the pylorus with induration and adhesions, preventing excision, is best cared for by a partial gastrectomy and re-establishment of continuity by preferably reuniting the resected stomach to the duodenum, or if this procedure is not feasible, by closing the severed duodenum and making an anastomosis between the stomach and the jejunum.

A large indurated ulcer with extensive adhesions located in the lesser curvature at the left of the median line may be treated by sleeve resection. In the occasional case where the ulcer is very large, indurated, densely adherent to the surrounding structures and the patient is a very poor risk where a resection would be hazardous, then an enterostomy should be done and feeding introduced into the jejunum until the ulcer has healed.

An ulcer on the anterior wall can be excised and the opening closed.

This is applicable to small ulcers on the posterior wall not densely adherent. Ulcers of this type can be reached to the best advantage by making an opening in the anterior wall of the stomach and resecting the ulcer through the cavity.

Perforated ulcers demand an immediate operation. In view of the fact that perforations may be multiple in acute ulcers, careful research should be made and each opening closed and reinforced with omentum. In fair risk cases steps may be taken

to cure the chronic indurated ulcer by excision or by making a posterior gastro-enterostomy, whereas in the case of a bad risk patient the excision of the ulcer or the gastro-enterostomy should be deferred to a more opportune time. It is to be noted that perforation does not cure an ulcer. I recall seeing a patient in the Royal Infirmary at Edinburgh, Scotland, with his third acute perforation of a chronic ulcer.

The following plan of general management for the surgical care of gastric and duodenal ulcers has been found to be of efficient value.

#### 1. Preoperative—

Establishment of water equilibrium in the presence of dehydration.

The administration of glucose if starvation is imminent.

Transfusion of whole blood if anemia is found.

#### 2. Operative—

Local anesthesia in conjunction with N<sub>2</sub>O and O.

Ample incision reducing to the minimum traction and permitting of a direct vision of all points of operation. Sharp knife for all dissections.

Cobbler stitch for all through and through viscera suturing.

Close approximation of peritoneal coats utilizing the sub-mucous coat as the anchor.

Using absorbable suture material throughout work.

#### 3. Post-operative—

Maintenance of water and food balance.

Control of all pain and restlessness, thus promoting sleep and repair.

Transfusion of blood if indicated.

Early use of the stomach tube if there is evidence of fluid accumulating.

Prolonged control of dietetic and hygienic measures.

## SURGICAL END RESULTS IN DUODENAL ULCER\*

WILLIAM D. HAGGARD, M.D., F.A.C.S., and W. O. FLOYD, B.S., M.D., F.A.C.S., Nashville

**T**HIS study embraces 100 cases of duodenal ulcer operated on at our clinic, together with 54 non-operative cases. Of these latter, 42 had the diagnosis confirmed by the x-ray. In 20 of these, operation was advised, but refused. The remaining 22 unoperated cases were advised to have medical treatment.

The following groups of cases were the ones that were given medical advice: (1) cases, whose symptoms were of short duration; (2) cases, whose symptoms were inconclusive, and only showed a slight defect of the duodenal cap on the x-ray plates; (3) cases with mild symptoms, that had no cap defect by the x-ray; (4) the minor group of cases, who had other and more serious lesions, such as nephritis, tuberculosis, etc.

The scope of this paper is intended primarily, to deal with and to report the end results in the 100 operative cases.

The clinical symptoms of our series might be summarized under the following headings: 1st, pain occurring within two to four hours after food that was not relieved until the taking of the next meal. This symptom is more readily elicited in some patients by asking directly how long before meals the pain occurs. Moreover, the frequency of food ease was of striking significance in our cases. Second, the night pain occurring after midnight with relief by taking water, alkalies or food, was noteworthy. Third, the considerable group of definite pyloric obstruction manifested by vomiting, frequently of materials ingested the day before. Many of our early cases

showed very advanced and marked obstruction, evidenced by visible peristalsis. Fourth, the frequency of hematemesis supplemented in a lesser per cent by melena. Fifth, the x-ray findings consisted of, (a) filling defect in the duodenal cap; (b) hyperstalsis; (c) retention after six hours of the barium meal.

This study was not undertaken to prove the efficiency of gastro-enterostomy, but simply as a stock taking of a fair sized number of cases done practically by one method under similar conditions with scrutinizing inquiry into the end results to see what had been accomplished.

All of the gastro-enterostomies have been of the so-called short loop retrocolic implantation at the most dependent part of the stomach. In the last third of this series the method has been by the all catgut suture material.

Three cases had negative exploration for duodenal ulcer. None of these cases were neurotic. All of them had very typical and positive histories, and definitely defective contour of the duodenal caps by the x-ray. No ulcer was demonstrated at operation, and gastro-enterostomy was not done.

The appendix was removed in two of the three cases. One of these cases had developed omental adhesions over the duodenum, which could have explained the x-ray cap defect, and following appendectomy remained well for some time, although this case could not be traced at present.

Another of the cases had his first hemorrhage sixteen years before, and two others later. The last hemorrhage left him so anemic that transfusion had to be done before exploration was attempted. No demonstrable pathology was found. It has been four years now since the exploration, and he reports no hemorrhage since, and that he is much improved, although he still complains at times of stomach symptoms and has to resort to alkalies for relief. He probably had some toxic erosions of the stomach.

Besides the three negative explorations, two other cases had gastro-enterostomies done elsewhere for so-called duodenal ulcer. Both were highly nervous, and complained

of the same symptoms after as before operation, which were mostly nervous in character.

X-ray examination did not show any cap defect, nor any defect at the gastro-jejunal opening in either case, and our conclusions were that duodenal ulcer had probably not existed in either case, either primarily, or at the time of our observation.

Of the remaining ninety-five operated upon, in which duodenal ulcer was demonstrated, twenty-two of them had perforations. Hence in this series of 154 cases, fourteen per cent of those diagnosed as ulcer and twenty-two per cent of those actually operated upon, had perforations.

The majority of our perforations have presented very grave symptoms. Many of the cases were advanced cases of general suppurative peritonitis, in two of which nothing was done except a suprapubic incision under local anesthesia with insertion of a glass drainage tube, evacuation of a large quantity of pus, which was unavailing so far as stopping the overwhelming sepsis from general and fatal peritonitis.

Wagner, in his study of a large group of perforations, found that the recoveries were all operated on within four hours after perforation and that no cases recovered after twenty hours of symptoms.

Shawan and Vale in the *Annals of Surgery*, 1923, reported ten cases of acute perforated duodenal ulcer which had occurred in the Receiving Hospital of Detroit during the past two years. All cases were operated upon with eight recoveries and two deaths—a mortality of 20 per cent.

The duration of the time from the perforation to that of operation varied from one and one-half to fourteen hours in the cases that recovered. The time of the perforation in case of death was nine hours and four days respectively. Only one case was saved after five hours. This case had the perforation closed at the end of fourteen hours.

Of the eight cases that recovered, four had closure and gastro-enterostomy. Two had excision and gastro-enterostomy, while one had excision and pyloroplasty and one

had closure only. One of the cases that died also had a closure only, while the other had a closure and gastro-enterostomy.

They stated that their results were equally satisfactory with the various methods used. They had no preference, preferring to individualize.

Their conclusion was that pre-eminently the immediate results depend less on the type of the surgical therapy employed than on the time interval allowed to elapse between the perforation of the ulcer and its proper surgical treatment.

Our perforations were classified as follows: Thirteen were acute and nine were subacute; seven of the nine had abscess, varying in duration from a few days to three weeks and varying in amount from two drams to two pints of purulent ma-

severe attack of abdominal pain and died in shock an hour or two later. Post-mortem showed a large, acutely perforated duodenal ulcer that caused his death.

We had diagnosed duodenal ulcer on this patient (Fig. 1) three years previous, and advised operation at the time, but this was declined, and the case went on to perforation. The other two cases were only drained as mentioned above.

Only four of the acute perforations were saved at operation. One five, one six, one eighteen, and one forty-three hours after the perforation had occurred. All of the cases that were lost had been perforated fifteen hours or more, the longest having been perforated forty-eight hours, and all of them had an acute general peritonitis when they came in the hospital. From this we concluded that immediate closure of the perforation is the essential thing in the surgical treatment.

All of the subacute cases with abscess, seven in number, recovered. Three of them had the perforation closed, while four had gastro-enterostomies done in addition to closure. Both of the subacute cases without abscess also had gastro-enterostomies, one of them recovered, and one died about the 17th day following a secondary operation for drainage of a local abscess.

All ulcer perforations were drained. There was, however, one duodenal perforation from a gun shot wound during this period, that I will mention briefly here in connection with the question of drainage.

This case had been perforated ten hours by a .38 bullet, which cut the border of the liver, and passed out through the duodenum. This case had occurred some hours after the last meal, and owing to the contraction of the musculature of the duodenum, due to the gun shot injury, the perforation was not open as we see them in the large, indurated, perforating ulcers, and hence we did not have in this case the usual amount of peritoneal soiling as in case of ulcers. This case recovered without drainage, and I think that under the circumstances, was as safe at the end of

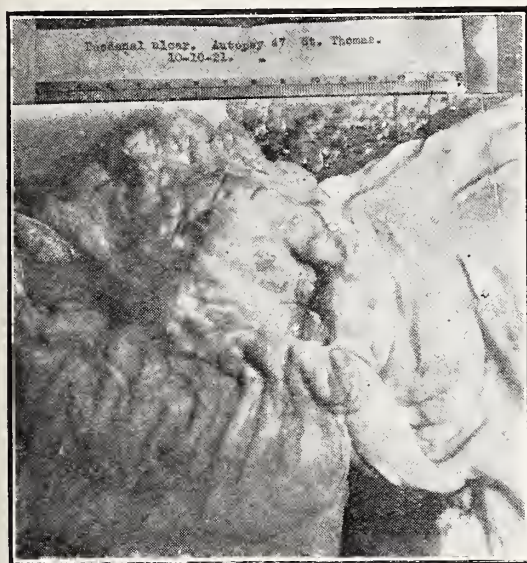


FIG. 1.

Acute, fatal duodenal ulcer perforation. Post mortem; large calloused ulcer just outside pyloric ring.

terial; two were diagnosed as acute infection of the gall bladder. All of the acute cases only had a closure of the perforation, save three. One case was so anemic from repeated hemorrhages, and a five plus hook worm infection when he came into the hospital, that a preliminary blood transfusion was done, preparatory to operation for the ulcer.

A few days later, he had a very sudden,

ten hours without drainage as with it.

Altogether, there were seventy-eight gastro-enterostomies done, seventy-two non-complicated cases, and six with perforations.

Only three resections of the ulcer have been done at our clinic in this series of cases, one primarily, during the past year, who remains well at the present time, and the other two were resections after gastro-enterostomies had failed to give relief. One of them had a fair amount of comfort for two and one-half years following gastro-enterostomy, but following two and one-half years more of pain and indigestion, was advised to have resection. This was accepted, but the patient died from a pancreatic fistula, which developed following the resection.

The other cases, resected secondarily, had a very similar history as to temporary relief from gastro-enterostomy, and lived eight years after resection, only to die recently of pneumonia. However, he continued to have some trouble during this time with his stomach.

So far as we have been able to trace, only one case has had resection elsewhere after our primary gastro-enterostomy. He, too, has continued to have more or less gastric disturbance ever since his resection, which was done about ten years ago. Hence, the two cases that failed to get relief from a primary gastro-enterostomy, also failed to get relief from a resection, but I think it only fair to the surgeon, as well as the different internists, who have since treated these cases to state that both were highly nervous and really the type of case that is difficult to cure of anything.

**End Results:** Twenty-six per cent at one or more times vomited blood, while 10 per cent gave a history of having passed tarry or bloody stools at some time during their ulcer symptoms. It is very striking that of the 70 cases traced since operation, only one case has given any history whatever of hemorrhage since the operation. This case was a very strong, country, blacksmith who had hemorrhages before operation. At the present time he eats

anything that he wants, and works every day, but lives in fear of another hemorrhage.

Of the four acute perforations that were saved, one is symptomatically well, another one operated upon six years ago could not be traced, and one each operated upon four and nine years ago respectively, state that operation greatly benefited them, but they still have occasional trouble with their stomach.

Of the eight subacute cases that were saved, three were closed only, one of whom remained well for four years, and died with tuberculosis. One remains well now for seven years, and the third had so much trouble for three months following the closure of the perforation, that he was advised to have a gastro-enterostomy done. This case is well now at the end of four years following gastro-enterostomy.

Of the five cases that had gastro-enterostomy in addition to closure of the perforation, four cases, or eighty per cent remained well. One case operated upon twelve years ago eats anything and works most of the time, but occasionally has mild symptoms of his old trouble, which is relieved by taking a little soda.

Of the seventy-two gaströ-enterostomies, there were three deaths, a mortality of 4.1 per cent. Two of these cases had pernicious vomiting for several days, were re-explored, and mechanical obstruction found. Both had enterostomies done for the relief of the obstruction without relief. The third death occurred on the fifth day of a bronchopneumonia, which set up about the twelfth day following the gastro-enterostomy.

Krause, in 1922, reported out of 176 gastro-enterostomies as against seventeen resections that there were twelve deaths, a mortality of  $6\frac{3}{4}$  per cent. He found that ninety per cent of cases that had definite pyloric obstruction were permanently cured by gastro-enterostomy.

From our experience with cases of persistent vomiting after gastro-enterostomy, we have found that frequent lavage has relieved some cases, that is, that they have recovered under this management; at the

same time when we reflect upon two cases that were lost from persistent vomiting of the vicious circle type, two of whom were re-operated upon as a last resort, in the attempt to overcome mechanical obstruction, we have come to the conclusion that late interference of this type is futile. One should either determine early whether or not the vomiting seems to be of mechanical origin and intervene early or carry the patient through by frequent lavage and rectal alimentation. If the patient should die under this management one always regrets not having operated secondarily but our experience has been that late reoperation is unavailing.

Our judgment would be that in the early cases if one could simply make an opening, a gastrotomy, slip a large tube down through the new gastro-enterostomy opening and nourish through that way, that it would straighten out any kink, nourish the patient, and prevent vomiting. We have not had an opportunity to try this method, but it seems theoretically promising.

Sixty of these sixty-nine cases that recovered have been traced. Forty-eight or 80 per cent report themselves as being cured, while three others report themselves greatly benefited, and none have any pain or real ulcer symptoms at present. Hence, eighty-five per cent of this series, practically speaking, have been cured by gastro-enterostomy.

Of the remaining nine cases that still complain of some trouble, none of them have been sufficiently disturbed to require reoperation. Three of these nine cases, already mentioned above, state that they are "almost tempted to say that they are cured." Three others of this group are highly neurotic, and complain chiefly of numbness of limbs, others nervous symptoms not produced by duodenal lesion, but are classified in the group of non-cured.

We have been fortunate enough not to operate upon any neurotic cases that had no ulcer, but the neurotic cases that did have large cap defects by the x-ray, and also the ulcer; four of the nine that still

complain of various nervous and gastric symptoms were of this type.

Summary: Fourteen per cent of the cases diagnosed and twenty-two per cent of those operated upon had perforations.

There was a mortality of forty-five per cent in the twenty-two perforated cases. Four out of seven, or fifty-eight per cent, of the cases with perforation that did not have a gastro-enterostomy have remained well with a simple closure of the perforation, and eighty per cent of the cases that had gastro-enterostomies done in addition to the closure of the perforation have remained well.

The mortality rate of the uncomplicated gastro-enterostomy was 4.1 per cent, including remote complications. Eighty per cent of these traced cases pronounce themselves cured, while three other cases, giving a percentage of 85, practically report themselves cured.

Every case that had a gastro-enterostomy save three, or ninety-six per cent, stated that they had had great benefit from the operation.

We are not unaware of or unsympathetic with the soundness of the argument in reference to excision of duodenal ulcer. We believe that it will be more and more employed in the future in our hands as well as those who have employed it very extensively. It is not going to be an elaborate removal of a large portion of the stomach with the duodenal ulcer as performed by the German school, and as exemplified by Finsterer, who operated in our clinic during his recent visit to America. Extensive resections will not be popular, nor indeed does it seem essential.

It is not to be gainsaid that the destruction of a small duodenal ulcer with a cautery when possible, or a knife excision when it is small enough not to interfere with pyloric emptying, is ideal. The great majority of our cases have not presented the simpler and easier variety suitable for excision of the ulcer. Many of them have been of the large calloused variety. It is believed that with increasing experience and ability to diagnose duodenal ulcer early,

with corresponding earlier operation, that a larger field for excision will exist than has been in the past where cases have been notoriously prolonged in their course and have not come for operation save as a result of a great period of disability and resulting pathological changes of considerable magnitude.

The mortality mainly was due to mechanical defects, most of which occurred in the early period of our work and which we have been able to obviate by more perfected technique.

The end results seem to be fairly satisfactory and mathematically confirm the impression that we clinically arrived at, that well placed and well executed gastro-enterostomies in the average case of duodenal ulcer have been attended in our experience with very gratifying results.

#### DISCUSSION

DR. W. A. BRYAN, Nashville: The cause of gastric ulcer and duodenal ulcer nobody knows. We may as well admit that. Dr. Carmichael raised the question as to the value of bacteria or infection in the etiology of ulcer. I incline more to that opinion than to anything else as a real cause. Here, as elsewhere, bacteria will act favorably in one case and produce an ulcer, whereas they will act unfavorably in another case. There are conditions present which favor the production of the action of bacteria in one case and in another case the conditions are not favorable. If I understood Dr. Carmichael correctly, he said he did not quite understand how bacteria could do this thing without getting into the blood. It is a fact, I believe, a universal fact, and shown in many instances, that in these cases where there is infection there are certainly, in a great number of cases, some bacteria that escape into the blood. The Doctor says he meant that they do not have a blood infection, and that brings up the question as to what is meant by real blood infection. One patient eliminates more by the urine, another has a bacteriemia, and another has definitely what is called a septicemia. I think it is certain that in all infections some of the bacteria do escape into the blood. If they lodge at a place that suits them, they grow and produce the damage.

Here are a couple of cases that illustrate that. A year or so ago I had a little girl brought to me with pyemia. That was the diagnosis, and I think it was correct. If we know anything about pyemia we know that it is due to the presence of

the bacteria circulating through the blood and lodging at different points. She had thirteen or fourteen abscesses, sometimes two or three at a time, and just as we thought she was well she would develop another abscess, every one in the subcutaneous fat. I do not know why.

I saw another patient who cut his throat and ultimately died of septicemia, or what might better be called septico-pyemia. His liver was the chief organ that was affected and it was completely riddled with abscesses, showing that the particular type of bacteria he had preferred liver substance. That was the idea I got from Rose-now, who stated that there is a group that prefers a certain sort of tissue, and that the group which is trained to eat appendices will also eat gall-bladder, stomach and duodenum.

Last year in the *British Surgical Journal* an article appeared by a man who went into a very elaborate study of the lymph drainage from the appendix. He proved beyond any question that there is a definite line of drainage over the lymphatics in such acute conditions and that persons who had definite pathology in the appendix would have these organisms going up both sides of the pylorus. If ulcers result they might be either peptic or duodenal.

One point about hemorrhage as a diagnostic element in ulcer. All the gentlemen have said that hemorrhage is sometimes a symptom of ulcer of the duodenum or stomach, but in many instances they do not find gross hemorrhage. The point I wish to emphasize, and I have seen case after case and have been deceived by many of them, is that hemorrhage while it may occur in ulcer is not proof that an ulcer exists. A patient may vomit a lot of blood. Dr. Doak vomited a lot of blood and passed a lot of blood, vomited again and again, and died with a history and symptoms that made the men who saw him diagnose duodenal ulcer. Postmortem examination showed an absolutely sound stomach and duodenum, with a fleck here and there that looked as if the mucous membrane had been bleeding in spots, a little erosion here and there.

Now, Sippy and the other medical men can say what percentage they think they are curing, and the surgeons can say how many they think they are curing, but the fact remains that none of us are curing all of them, and the thing we should do is to reach a basis which we think will give the patient the best chance. We should think, "If I had what this fellow complains of, what would I wish to have done?" That is the way we should practice and deal with these things. I believe that if I had a gastric or duodenal ulcer of recent origin, I would want the benefit of medical treatment. All those ulcers that are producing obstruction are surgical; we cannot get away from that. All that have been "permanently cured" by medical treatment and relapse are surgical. All the cases that have not been

improved and cannot be improved by a reasonable course of treatment accurately carried out—and that is very hard for the doctor to get and to know that he has had a definite, accurate plan of treatment carried out unless the patient is in the hospital—become surgical. There is no question of that. I thank you.

DR. YOUNG W. HALEY, Nashville: Dr. Carmichael brought out one point in his paper which he did not emphasize and which I wish to stress, and that is pyloric spasm and the many things that may cause pyloric spasm, other than an ulcer of the pylorus. He also brought out a point regarding the probable efficiency of x-ray findings as a positive diagnosis in gastric ulcer.

If you will pardon me for referring to my own case, in which a diagnosis of pyloric ulcer was made two years ago and confirmed by the x-ray findings, I will state that upon operation they found absolutely no ulcer at the pylorus. They found some adhesions about the gall-bladder—with a streptococcic bile, and when drainage of the gall-bladder gave no relief it was decided that the trouble was probably due to pyloric spasm, which has been relieved, or cured, by the taking of belladonna. I would like to stress the point that pyloric spasm may so closely simulate gastric ulcer that this diagnosis may be confirmed even by x-ray findings. I had all these symptoms, even to the passage of blood and the hunger pain which was relieved upon taking food, but upon operation no ulcer was found, and it was concluded that all the trouble was due to pyloric spasm. This has been definitely relieved by taking belladonna.

I wish to present this for the good it may do, and to call attention to the fact that frequently by giving belladonna or atropin in sufficient quantity these symptoms may be relieved.

DR. W. A. BRYAN: When the hemorrhage first occurred had you had any gastric symptoms before that time?

DR. HALEY: Yes, I had had symptoms for years. I had a hemorrhage from the intestine fourteen years ago and had an acute attack for four months before operation, in which the pain was so severe that I had to take one-fourth grain of morphin every four or five hours for control. Nothing else would relieve it.

Probably one cause of some of the symptoms of pyloric spasm was found upon operation, a hepatitis. I was operated upon at the Mayo Clinic and the macroscopic appearance of the liver was thought to be that of a malignancy, but the microscopic appearance gave a much more favorable prognosis. I have gone two years without any return of severe symptoms, and in the two years have improved so satisfactorily, and have been so much relieved by belladonna, that I believe there is probably not a malignancy. I hope not at any rate.

DR. H. W. HUNDLING, Memphis: The surgical phase of duodenal ulcer is very interesting now because of the tendency toward radicalism. In the small ulcer without any marked induration and secondary obstruction the simple excision has given good results. The pyloroplasties as done by Finney and Horsley have been very good, and there has been no tendency to recurrence following this type of operation. Gastro-enterostomy in a large series of cases will give about 96 per cent of cures. In one or two per cent of the cases there may be development of a gastro-jejunal ulcer which will usually call for operation. One of three methods may be used, either excision of the ulcer with enlargement of the stoma, or excision and pyloroplasty, or excision and pylorotomy. The Polya operation is probably one of the most satisfactory types.

In ulcer of the stomach one of the most important points, which has been stressed especially by Balfour, is the cautery excision. He has reviewed a large number of cases with a mortality of about 6 per cent. In the cases where the use of the cautery and then of gastro-enterostomy has been employed this dropped to 3 per cent. In ulcers near the pylorus, and especially on the lesser curvature, the Billroth operation has been used with excellent results.

The danger formerly was due primarily to leakage, but in the recent modifications where the omentum has been used to cover over the suture line, as practiced by Dr. Charles Mayo, the mortality has been markedly reduced.

DR. W. S. ANDERSON, Memphis: Just a word on infections through the blood stream. I wish to recite briefly the case of one of our brother practitioners in Memphis, which occurred some time ago. He had tried a very elaborate form of alkaline treatment for his symptoms, with no effect. He was finally persuaded to have his teeth rayed, and one dead tooth was found. After this tooth was extracted his symptoms immediately began to improve, and since then he has been permanently cured.

In regard to pylorospasm, you must not overlook syphilis of the stomach. That may be the causative factor. I think Dr. Bryan has very carefully covered the subject and that all these things should be kept in mind.

A very essential factor in the ultimate cure of these cases is to have an internist follow up those operated on, by a routine system of diet for some time.

DR. C. J. CARMICHAEL, Knoxville (closing on his part): I really have nothing to add except to emphasize the importance of taking all of the symptomatology together in making the diagnosis. You probably noticed that in the discussion and in the papers two points were particularly stressed, cap deformity and hemorrhage. So many things may deform a cap that we must

always be on our guard, and there is no one thing upon which we can base the diagnosis. The symptomatology must be taken as a whole, else we will fall into error.

DR. BENJAMIN I. HARRISON, Knoxville (closing on his part): I wish to say two things: First, that in either a duodenal or a gastric ulcer it is absolutely essential that a very thorough and painstaking hygienic and dietetic medical method should be carried out previous to operation. Second, as emphasized by one of the speak-

ers, all foci of infection should be searched for and eliminated. They should be looked for in the acute stage and eliminated in that stage, before the ulcer has advanced to the point of induration and adhesion.

Also, I might add that in the postoperative care all cases should be kept on a careful dietetic and hygienic regimen.

DR. W. O. FLOYD, Nashville (closing, showed seven lantern slides).

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## SPASMODIC STRICTURE OF THE ESOPHAGUS IN A THIRTEEN-MONTHS' OLD BABY\*

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RICHMOND MCKINNEY, M.D., Memphis

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Dorothy S., aet. 13 months, living just outside of Memphis, was brought to me on January 29, 1923, with the history that on December 12, just past, while playing, fell, and on getting up, began crying and vomiting. Ever since then she had had difficulty in swallowing, the food being regurgitated, and apparently she seemed to suffer pain on attempting deglutition. The baby had been losing weight steadily. She even seemed to have some difficulty in swallowing saliva, for this ran from her mouth freely.

Esophagoscopy, without anesthesia, was done the next morning. A Bruenings 7 mm bronchoscope was introduced, and the eso-

phagus carefully inspected. No abnormal resistance whatsoever was encountered, and the esophagus from cricoid to cardia was normal in appearance. A Jackson No. 12 linen bougie was passed to the stomach. Fluroscopy was not attempted.

Complete relief followed this procedure, with no further difficulty in deglutition, the baby gaining weight rapidly, until about a month later, when difficulty in swallowing again was developed. The same routine was used and there has been no return of the symptoms since.

This doubtless was a spasm, but I have never seen a case similar to this in a very young child and can find no report of this occurring in one so young. Furthermore, what caused the spasmodic reflex—the fall sustained?

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\*Read by title, Seventh Annual Meeting of the American Bronchoscopic Society, St. Louis, Mo., May 28, 1924.

## MEDICAL SCHOOL INSPECTION IN KNOXVILLE\*

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HENRY K. CUNNINGHAM, M.D., Knoxville  
Medical Inspector of the Public Schools

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**M**EDICAL inspection originated in France in 1833 to provide sanitary conditions and to supervise the health of school children.

In the United States the introduction in 1894 followed a series of epidemics among children in Boston. Then the primary purpose was elimination of contagious diseases. Since that time the fight has turned toward remediable physical defects. Recently the teaching of personal hygiene has become a part of the work.

Knoxville has the honor of being the first city south of the Ohio to provide this work for its public schools. The work was started here in 1906 and Dr. C. J. Carmichael was the first medical inspector. The first work was mainly educational and it was very hard to get the children's parents to co-operate with the doctor, as there was considerable resentment of the interference with the child. This state of affairs still holds true, but to a far lesser degree than at that time. Problems of ventilation and sanitation were the first ones attacked. The inspector also worked to get adequate fire escapes on the school buildings. The question of overcrowding was investigated and gross physical defects were noted when the eyes, ears and throat were examined. There was no nurse at first and a system of cards and examination blanks had to be devised.

From this humble beginning when the scholastic population was around 5,000 to the present time, when our students number nearly five times that figure, the work has gradually grown.

There are now engaged in this work three doctors and five nurses. One colored

doctor and one colored nurse look after the negro students. The white scholastic population numbers around 20,000 pupils, so that this gives each doctor half that number to look after and each nurse about 5,000 to have charge of.

The plan of inspection is as follows: Once each year the children are gone over thoroughly, starting in the lowest grades and working upwards. The examinations are made outside the class room, in the school library or rest room. The pupils are taken out row at a time and this enables the teacher to go right on with her instruction. The examination consists of, first, a general examination for postural defects, signs of undernourishment or malnutrition, vermin and vaccination scars. Then a more detailed inspection is made of the eyes, looking particularly for errors of refraction with the reading charts, ciliary bletharitis, and trachoma. The ears are examined for impairment of hearing, and any discharge or other abnormality is noted. Next in order are examined the teeth, tonsils, neck, for any signs of large glands or scrofula, and then the heart and lungs are gone over carefully.

Let me state here that many of the laity have the idea that underweight is the most important sign of malnutrition. However, it is only one of the points in diagnosing this condition, and the following signs should be looked for, viz.: delicate, sallow skin; muddy or pasty appearance; dry, lusterless hair; loose, flabby flesh; muscles relaxed and shoulder blades protruding. The red membranes of the lips and mouth are pale and pink. Under the eyes are dark spaces, the chest is flat and narrow and the expression is dull and listless.

These records are kept on file in alpha-

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\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

betical order in the principal's office, and if the child is transferred to another school the record of its physical condition is sent with it just the same as its mental record is sent. The physical examination charts are referred to by the teacher and there is a space marked "Suggestions to Teachers," where the inspector can make any notation which he thinks will help the teacher to understand the pupil's condition better. All cases which need attention have their names placed on a slip of paper which reads as follows:

#### KNOXVILLE CITY SCHOOLS.

-----School. Date-----

Notice to Parent or Guardian:

Examination of -----  
shows indication of disease of-----

It is advised that you consult your physician or specialist and see if it can be remedied. The above condition may seriously interfere with your child's progress in school.

-----, M. D.,  
Medical Inspector.

-----  
Signature of Parent or Guardian.

The pupil takes this slip of paper home and has its parent or guardian sign it and in this way the mothers and fathers are made aware of the defects which their children have. When the slip is returned the teacher keeps it on file and the doctor knows where to look for it for future reference.

The cases which have conditions which render them unfit to remain with the other children are given blanks with these words on them:

#### KNOXVILLE CITY SCHOOLS.

To the Parent or Guardian:

The condition of-----, a pupil in-----School, is suspicious of-----, and in accordance with the regulations of the Board of Health, is sent home for medical care. Please call the attention of your physician to the case and have him verify or clear our suspicion.

-----, M. D.,  
Med. Ins. Schools.

A copy of this notice is kept by the physician and the nurse is sent to follow up the case and see that the condition is attended to.

There are two graduate nurses on duty with each inspector and they work in co-operation with him. Their work consists in assisting in making the examinations of the pupils, vaccinating charity cases, visiting the home and trying to make them be more sanitary (where needed); make health talks to the children, looking up contagious cases and seeing that no child from a home where contagious cases exist attends school, and taking charity cases to the free clinics.

This last work is the most important the nurses do and more good results come from it than from any other work done by the nurses. The children are taken to any of our three free clinics, the choice usually being determined by the distance from the child's home or school to the clinic.

It is my plan to have the cases gotten to the clinics and the diseased throats, decayed teeth, poor eyes and other conditions attended to at the expense of everything else, because here is where you can see results right before your eyes. I believe that I am justified in this by the almost miraculous improvement in some of these poor little children when their diseased throats, teeth or eyes are treated. The cases are investigated in a thorough manner as to their financial standing before they are taken to the clinic, of course. The nurse with a car can, of course, do much better work than one without, as she can bring the children direct to the clinic and can cover much more territory than one on foot.

The doctor makes out a schedule at the beginning of the year and has a certain day to visit each school. This enables the principals and teachers to have the cases that they want looked at present for the doctor to look at on his day at that particular school. The doctor visits all his schools once a week and the nurses visit their schools several times a week. If an emergency comes up the doctor goes to the

school or the case is sent to his office for treatment.

The orthopedic cases are looked after by the Kiwanis and Rotary clubs and much good work is done by these organizations.

In addition to the above there is also distributed literature about diphtheria and the Schick test, and the children are told to take the pamphlets home and have their parents read them. At the bottom of the description is a blank form asking the parents who want their children Schick-tested to sign and return to the teacher.

The sanitary inspections of the school buildings and the inspection of fire escapes and of fire drills also come under the work of the school physician. The things especially to be looked for in a sanitary inspection are the conditions of the toilets and outhouses. The basements are examined for unhealthful conditions and also collections of material which would increase the fire hazard are reported to the principal, who sees to it that the janitor attends to it at once.

This about concludes my very brief description of the work as we do it here in Knoxville, and I wish to say that school health work is primarily diagnosis as far as the medical side is concerned; usually and rightly someone else must do the treatment, since the competition with the practicing physician or the clinic is neither fair nor desirable.

The medical inspector's department is merely a sorting system composed of physicians, nurses and teachers, which separates the normals and attempts to get others to care for our abnormals, except in first aid cases of a minor nature. Generally, we do not have unusual facilities for diagnosis. The main thing is finding these defects in the children and getting specialized attention to them.

In conclusion, I want to say that the days of an education limited to the three R's is forever past, and it is just as essential in the complex life we have now developed that boys and girls learn how to preserve their strength and protect them-

selves from disease and debility as it is that they learn language, mathematics, music and art.

The ultimate success of this work will depend on the interest and hearty co-operation of the rest of the medical profession.

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#### DISCUSSION.

DR. A. B. THACH, Nashville: The medical inspection department of Nashville is carried on something similar to this. I cannot say that we have as much help as we need, and I do not believe the medical inspection department of any city will be a success until the physicians give their hearty co-operation to the inspection department.

We try to keep from doing anything that will interfere with the doctors, and we only want the children to get what is coming to them. We have reduced the number of unsuccessful vaccinations in our schools from 96 to 70 per cent. I think that is due to the vaccine that is kept in outlying drug stores and not to the physician. I think the vaccine in many instances is spoiled at the time of its use.

One of our greatest troubles is children with defective vision. So many of the children do not go to the regular physicians, but to opticians who fit their glasses, and about 75 per cent are not fitted correctly. It is hard to get them to go back to the physician for correction of their defects.

In the tonsil cases we refer these patients, and in some schools we have found 33 per cent of the children with the tonsils removed. I am sure that has done a great deal of good. We feel that in those schools we have better work and that the children are able to carry on their work with less inhibition.

In our schools we have found that from 19 to 30 per cent of the children are underweight. We have carried on an intensive campaign with about forty teachers in an effort to increase their weight and have been successful in a degree. We have children who are now drinking milk who would never drink it before, and the teachers have noticed that the children are much more active and intelligent than previous to this campaign. They found that the children who were giving the most trouble were underweight, poorly nourished, and I believe that in the next few years if this can be carried out that it will be of much benefit and that it will help to prevent tuberculosis.

I think we are too prone to overlook children who have tuberculosis, and I believe we will find that these children can be nourished and brought up to weight and we can do a great deal of good. The medical profession, we feel, is often overlooking the fact that children suffer from tuber-

culosis and have hemorrhages, and that condition can be corrected and controlled if we go at the children properly. I think more careful examinations should be made of the children. I do not feel that the tonsils and teeth every time can make the child 10 per cent underweight. It is due to some error in his diet or he is not receiving the proper amount of food. He probably needs some milk or something of that kind.

DR. WILLIAM LITTERER, Nashville: I would like to ask about the number of compliances to Dr. Cunningham's requests, with special reference to the Schick test and the toxin-antitoxin test. The inspectors, as I understand it, are nearly powerless in their requests. Is there any law compelling these people with very bad tonsils to have them cared for? I would like to know how many comply with his requests and if they do not comply what recourse would they have?

DR. WILLIAM C. SANFORD, Ripley: The Doctor spoke of the teeth and the eyes. In inspecting those children who are underweight you find a large percentage have pyelitis. If you examine the urine you find a large percentage of pus cells and you cannot get them out in a little while. They get infected from the teeth or blood stream. In the girls they get infected and I find quite a number of boys that have pyelitis and they all have bad teeth and tonsils, and the inspection should be thorough. I think not only the eyes and the throat should be examined, but that they should be examined all over. If the child has pyelitis and you give him milk, he will not get rid of the pyelitis until you get rid of the pus cells in the urine.

DR. WESLEY J. BREEDING, Sparta: I do not know how it is in Knox County, but I know in our rural counties if you make a microscopic examination you find a large percentage of school children are infected with hook-worm disease and that this is responsible for the reduction in their weight, at least to a very large extent. Some years ago I was engaged in a survey of a few of these counties and found about 50 per cent. of these children were infected with hook-worm disease. If you clean them up they will gain in weight remarkably. I think this should be considered an important point in the examination of school children.

DR. H. K. CUNNINGHAM, Knoxville, (closing): In answer to Dr. Litterer; that is the trouble in Knoxville and other cities—we have not enough power behind us to enforce these things. The only thing we can compel is vaccination. That we can insist upon, and can send the parents

to the workhouse or fine them if they refuse. We have done this in some instances. We have even had cases of trachoma and they refused to have them attended to as we requested. Adequate laws should be passed to compel parents to do these necessary things. We cannot compel the children to be Schick tested; it is entirely voluntary on their part, and the only way to compel it would be to pass a city or state law.

I admit that there are many cases of pyelitis that we overlook. The examination at present is not as complete and thorough as we wish it to be. In the cases that we suspect pyelitis or kidney trouble we get them into the clinic or get their private physician, if they have one, to look after them.

I do not think we have as much hook-worm in the cities as they have in the rural districts, but we do have some. If we suspect it we send the patients to the clinic for stool examinations.

In regard to vaccination, I do not recall a single case of smallpox this year in our city school children. In the rural schools where vaccination is not compulsory they have had several deaths among the teachers and children and several schools closed. This is the best argument for it that I know of.

The point I wish particularly to bring out is that we do not treat the cases ourselves. We want the children to go to their family physician. We do not interfere with the private physician, and have no intention of doing so. Our work is to examine the case and refer the patient to his or her private physician. I am greatly opposed to sending patients to the clinic who can afford to pay for having their tonsils removed.

I must admit that I have found very few tuberculous patients. In any suspected case we send the patient to the clinic for x-ray examination and refer them to the chest men for thorough examination.

In regard to taking out diseased tonsils and adenoids; since I have been doing this work I have become an extremist on this. I think if they were all removed the results would be better than if they were all left in. I believe these badly infected tonsils undermine the health of the child more than any other one thing. Rheumatism, nephritis, heart trouble, and defect of vision are all traceable to the throat infection. This is a very hard subject to interest the general medical man in, but if I can bring to the attention of the physicians from the districts outside the cities the importance of vaccination, and medical inspection of the school children, I will feel that my efforts have not been in vain.

## RESPONSE TO TOAST AT BANQUET GIVEN DR. HAGGARD BY THE NASHVILLE ACADEMY OF MEDICINE

Belle Meade Country Club, Nashville, Tuesday, June 24, 1924

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By IRVIN ABELL, M.D., F.A.C.S., Louisville

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Mr. Chairman, Mr. President-Elect, Members of the Academy of Medicine, and Gentlemen:

I have come from My Old Kentucky Home, bearing with me the congratulations and good wishes of Dr. Haggard's many friends and admirers, to be added to your own in this, your tribute of respect, affection and esteem. I regard it a privilege to be the carrier of such messages and an honor to have the good fortune to present them in person.

Kentuckians are very much akin to Tennesseans, springing from a common racial stock, having much the same likes and dislikes, developing along similar lines, diverging upon the interpretation of "bone dry"—for in Kentucky the corn is still full of kernels and some of the colonels are still full of corn; in fact, we feel so close to you that our satisfaction and joy upon the bestowal of so signal an honor upon your distinguished fellow citizen is commensurate with your own.

I attended the Chicago session of the Association, and as a member of the House of Delegates felt as a juror who had determined to vote for Dr. Haggard's conviction and sentence to the presidential chair. My mind was running on one track, which at times may be an advantage, at others a disadvantage, as illustrated by the story of the Irishman who served on a jury, before which another Irishman was being tried for murder. As the evidence was developed it was of such character as to give great concern to the friends of the accused and they became very apprehensive of a verdict that would send him to the chair. Seeking an opportunity to speak to the Irish juror, they said, "Pat, Murphy is one

of us and we must save him from the chair. Do all you can to have the jury bring in a verdict of manslaughter, as this will save him from execution." After the prosecution, and the counsel for the defense, had completed their arguments, the case was given to the jury, which then retired to the jury room for deliberation. As each hour passed Murphy's friends became more depressed, until the fear that Pat would be unable to obtain the desired verdict became a conviction. Finally, the jury reported that it had reached a verdict, and when this was announced as manslaughter Murphy's friends were jubilant. When the opportunity presented, they spoke to Pat, expressing their gratitude, and asked if he had had hard work, to which he replied, "I certainly did; those bums wanted to acquit him." In the case of Dr. Haggard there were some few who voted for acquittal, but the great majority declared that he must go to the presidential chair. This verdict having been rendered, it is but meet and fitting that we, his friends, should in this representative assemblage express our appreciation of the high professional attainments, the long and productive years of arduous work both in and for the profession, combined with the superlative qualities as a man and a friend of man that have brought to him the most distinguished honor that can come to an American physician. There are 90,000 members of the American Medical Association, and as but one can be elected president annually it naturally follows that but few can attain this coveted position.

The rapid rise and development of the medical profession in this country has been phenomenal, particularly when contrasted

with conditions that obtain on the continent. In Germany the professional wheel revolves around the clinic as a hub; all professional knowledge is disseminated from and all professional activities radiate from the clinic. Without a connection therewith one of necessity is limited to a life of mediocrity. In France all educational facilities and opportunities are offered the students showing the greatest mental alertness and aptitude, developing their leaders from the few at the expense of the many. Those of us who have been teaching long enough to have observed the professional career of the students who in college showed the greatest brightness, will question the fairness and wisdom of such a method. It is conceded that a well trained mind is essential to successful leadership or the attainment of eminence in the profession of medicine, but neither can be won without the amalgamation of other vital qualities therewith. The educational standards of Great Britain are probably productive of a better qualified professional personnel, man for man, than those of any other country, giving them a well leavened whole with the development of their leaders under hospital and university egis.

Medical education in the United States, for the solution of the problems of which Dr. Haggard has labored so long, is finally on a plane comparable with that prevailing with our overseas confreres; but in this wonderful land of "dreams come true," each individual doctor, granted he possesses energy and ambition, is given the opportunity to develop according to the endowments with which he has been blessed by a Divine Providence. Consequently, the roster of the American Medical Association contains the names of more eminent physicians than can be found in any other one country in the world.

For the vast majority of us life's stream pursues its tranquil or turbulent course ending in the ocean of oblivion without its power, its beauty, or its strength having established a landmark that would differentiate it from those of our contemporaries. To possess the culture, education, intellect-

uality and professional ability; to have maintained the standard of professional and ethical excellence; to have lived the life of social service in one's community and nation, and to have evinced loyalty and patriotism to the combined degree that the greatest association of professional men in all the world chooses a man as its accredited leader, is to stamp the recipient of such a tribute as a doctor among doctors, as a man among men, and as a citizen among citizens. The list of names of the past presidents of the American Medical Association comprises a galaxy of stars forming a befitting diadem for American medicine. And now, gentlemen, another star from our beloved Southland is added to this crown, to shine with resplendent light and effulgent glow as long as the history of American medicine shall endure. We of Kentucky and Tennessee are tenacious of our opinions, loyal in our friendships and modestly assert that we know the genuine article when we meet it. We are glad to have the American Medical Association place its stamp of approval upon our judgment. We have long since recognized in Dr. Haggard an accomplished surgeon, an eminent teacher, a student of medical education, economics and sociology; a constructive citizen, a delightful companion, a friend who knowing us as we are loves us still; a possessor of discernment and judgment, qualities so essential for leadership, a combination that peculiarly fits him for the exalted position he is to occupy as our standard bearer during the ensuing year.

I confess, Mr. President-elect, that only under the conditions afforded by this testimonial would we so unreservedly bare our hearts to you, fearing that our seeming boldness might have an undesirable psychological reaction on your sense of propriety. You deserve the praise and the encomiums that are heaped upon you this evening, and if they prove somewhat embarrassing, I trust that you may be able to say of them, as the maiden said of her first kiss; "somewhat embarrassing but, after all, most enjoyable."

# THE JOURNAL

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J. F. GALLAGHER, M.D. \_\_\_\_\_ Editor  
R. C. DERIVAUX, M.D. \_\_\_\_\_ Associate Editor

JULY, 1924

## MEDICAL NEWS AND NOTES

Dr. A. R. Reynolds, of Bon Air, has recently located at Crawford.

The Madison County Medical Society held their annual outing and barbecue on July 24.

Dr. Hobart Massey, of Louisville, Ky., spent his vacation with his brother, Dr. V. E. Massey, in Huntingdon.

Dr. Lawrence T. Royster, of the University of Virginia, addressed the Hamilton County Medical Society on July 18.

Dr. E. B. Cayce, of Nashville, sustained a fracture of the fibula June 30, when he was struck by a messenger boy on a bicycle.

Dr. Wayne T. Robinson, formerly of Shelbyville, has removed to Dallas, Texas, and has offices at 614 Medical Arts Building.

Dr. George K. Carpenter announces the opening of his office, 301 Jackson Building, Nashville, for the practice of Orthopedic Surgery.

Dr. W. L. McCreary was unanimously re-elected President of the Tennessee State Board of Medical Examiners at its annual meeting held in Nashville July 12.

Dr. Milton S. Lewis has announced the opening of his office in the Vendome Building, Nashville, for the practice of Obstet-

rics and diseases of infancy and childhood.

The Chattanooga District Medical Association which embraces north Georgia and north Alabama as well as the area around Chattanooga will have its fall convention in Chattanooga. The spring session was held at Dalton, Ga.

The thirteenth annual outing of the Henderson County Medical Society was held at Hinson Springs June 26. The scientific meeting was followed by a barbecue dinner. Among the out-of-town guests were: Drs. A. B. Dancy, S. M. Herron, Herman Hawkins and R. B. White, of Jackson; Drs. Willis C. Campbell, Otis W. Warr and Charles Blassingame, of Memphis; Drs. E. M. Sanders, W. O. Floyd and W. W. Wilkerson, of Nashville.

## DEATHS

Dr. James T. Ward, aged 69, died at his home at Centerville June 15, after a ten-day illness. Gangrene of the foot was ascribed as the cause.

Dr. Henry F. Hudson died June 30th at his home in Greenfield, aged 77. He was a graduate of the Louisville Medical College of the class of '73.

Dr. Newton C. Ellis, of Friendsville, died in the Knoxville General Hospital, June 25, following an operation for appendicitis. He was 56 years of age. Dr. Ellis was a graduate of the Medical Department of Lincoln Memorial University, Knoxville, in 1891, and was a member of the Blount County Medical Society. Suitable resolutions were passed by his county society which were furnished the press as well as the family of the deceased.

Dr. James M. Masters, aged 72, died suddenly at the home of his son, Newport, June 26.

Dr. J. C. Eskew, of Lebanon, died July 7, aged 84. He was a graduate of the Medical Department of the University of Nashville of the class of '66.

Dr. Luther F. Ferguson, of Gates, died on May 2 of perforated gastric ulcer. He was 55 years of age and a graduate of the Memphis Medical College of the class of '08. He was a member of the Lauderdale County Medical Society.

## BOOKS RECEIVED

### THE SCIENCE AND ART OF ANAESTHESIA.

By Col. William Webster, D.S.O., M.D., C.M., Professor of Anesthesiology, University of Manitoba Medical School; Chief Anesthetist, Winnipeg General Hospital. Cloth. Price, \$4.75. Pp. 214, with 37 illustrations. St. Louis: C. V. Mosby Co. 1924.

In this little volume the author has covered practically all phases of anesthesia in a brief manner. This manual is best suited for use as a text book by medical students and practitioners that give an occasional anesthetic. The expert will consult larger works.

The outline of the history of anesthesia is exceptionally well written, and all Southern physicians will be pleased to find the name of Crawford W. Long in its proper place. The chapter on the physiology of anesthesia is too short for a subject of this importance. He has considered all the routes of administrations, including rectal and spinal; he gives the different anesthetics, even the most recent addition, ethylene.

Colonel Webster, in closing, details the many duties of the anesthetist, and writes that "The anesthetist must expect little recognition for the part he plays in the operation. . . . He must be content to recognize that the spectacular part of the operation belongs solely to the surgeon and that his work lies

'In doing finely

A multitude of unromantic things.'"

S. P. B.

# OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION 1924-1925.

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W. S. Anderson -----Memphis

**Committee on Public Policy and Legislation.**

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R. F. McCrary -----Knoxville

President and Secretary ex-officio.

# LIST OF MEMBERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

## 1924-1925.

### ANDERSON COUNTY.

Campbell, W. B.-----Coal Creek  
 Carden, W. L.-----Andersonville  
 Cox, J. M.-----Coal Creek  
 Eblen, W. H.-----Davonis  
 Gammon, J. H.-----Coal Creek  
 Hall, S. B.-----Clinton  
 Hall, J. S.-----Clinton  
 Hayes, J. T.-----Oliver Springs  
 Heaker, H. E.-----Oliver Springs  
 Hicks, H. D.-----Clinton  
 Johnson, C. L.-----  
 -----State Hospital for Insane, Danville, Pa.  
 Taylor, J. Sam-----Clinton

### BEDFORD COUNTY.

Ashley, Grady-----Normandy  
 Avery, W. H.-----Shelbyville  
 Burdett, Ben-----Shelbyville  
 Coble, T. J.-----Shelbyville  
 Conditt, J. T.-----Flat Creek  
 Connell, M. L.-----Wartrace  
 Landis, G. L.-----Unionville  
 Moody, G. W.-----Shelbyville  
 Moody, S. S.-----Louisville, Ky.  
 Morton, James L.-----Shelbyville  
 Ray, T. R.-----Shelbyville  
 Shelton, R. E.-----Lynchburg  
 Sutton, John T.-----Petersburg  
 Taylor, J. P.-----Wartrace  
 Woods, T. G.-----Bellebuckle

### BLOUNT COUNTY.

Bricell, W. O.-----Friendsville  
 Carson, J. E.-----Maryville  
 Crowder, C. F.-----Maryville  
 Delozier, B. E.-----Maryville  
 Ellis, N. C.-----Friendsville  
 Ellis, E. L.-----Maryville  
 Gamble, A. M.-----Maryville  
 Hyder, R. L.-----Maryville  
 Isham, A. J.-----Townsend  
 Kittrell, S. S.-----Louisville  
 Lequire, G. D.-----Maryville  
 Lovingood, W. B.-----Maryville  
 McCulloch, J. A.-----Maryville  
 McMahan, J. W.-----Alcoa  
 Norton, J. N.-----Walland, R. F. D.  
 Tipton, J. S.-----Friendsville  
 Vinsant, C. C.-----Maryville  
 Zoller, F. A.-----Maryville

### BRADLEY COUNTY.

Bean, R. L.-----Cleveland  
 Chambers, T. E. P.-----Cleveland  
 Davis, R. L.-----Cleveland  
 Gilbert, G. F.-----Cleveland  
 Harris, H. W.-----Cleveland  
 Kibler, R. O.-----Cleveland  
 McKamey, T. J.-----Cleveland  
 McKenzie, J. L.-----Cleveland  
 McClary, J. L.-----Charleston  
 North, S. B.-----Cleveland  
 Owens, L. D.-----Charleston  
 Speck, C. T.-----Cleveland  
 Sullivan, R. P.-----Cleveland  
 Sullivan, W. H.-----Cleveland

### CAMPBELL COUNTY.

Brown, G. B.-----Elk Valley  
 Carden, U. S.-----LaFollette

Cole, Aaron-----Goin  
 Gallaher, R. L.-----Caryville  
 Hefferman, J. L.-----Jellico  
 Jennings, Thomas-----Jellico  
 Jones, W. N.-----Jellico  
 Lawson, A. L.-----Elk Valley  
 Lindsey, J. P.-----Pruden  
 Longmire, W. H.-----Pioneer  
 McClintock, F. A.-----Newcomb  
 Moore, D. W.-----Jellico  
 Presley, J. W.-----Red Asn, Zy.  
 Queener, S. D.-----Jacksboro  
 Richmond, G. M.-----Jellico, R. F. D.  
 Rogers, G. M.-----Block  
 Rose, J. L.-----Jellico  
 Rose, W. B.-----LaFollette  
 Scott, L. M.-----Jellico  
 Sharp, J. S.-----LaFollette

### CARROLL COUNTY.

Alexander, E. M.-----McKenzie  
 Alexander, H. L.-----McKenzie  
 Collier, H. T.-----McKenzie  
 Cox, J. B.-----Huntingdon  
 Douglas, Roy A.-----Huntingdon  
 Everett, E. M.-----McKenzie  
 Fesmire, O. W.-----Atwood  
 Hillman, E. W.-----Trezevant  
 Hoffman, S. W.-----McKenzie  
 McGill, H. D.-----Yuma, R. F. D.  
 Massey, V. E.-----Huntingdon  
 Murphy, L. D.-----Beuna Vista  
 Trevathan, L. E.-----Junction City  
 Williams, J. H.-----McKenzie

### COCKE COUNTY.

Atchley, J. M. C.-----Hartford  
 Hampton, J. E.-----Newport  
 Holland, C. G.-----Newport  
 Holt, J. S.-----Newport  
 McGaha, W. E.-----Newport  
 Nease, L. S.-----Newport  
 Northcutt, E. E.-----Newport  
 Shields, J. A. P.-----Hartford

### COFFEE COUNTY.

Farrar, J. H.-----Hillsboro  
 Mitchell, J. A.-----Tullahoma  
 Ray, Archie E.-----Tullahoma  
 Vaughn, E. P.-----Manchester  
 Wilson, W. M.-----Tullahoma

### CROCKETT COUNTY.

Fish, R. Graham-----Alamo  
 Harris, John H.-----Bells  
 Jones, John H.-----Alamo  
 McDonald, S. E.-----Bells

### CUMBERLAND COUNTY.

Lewis, V. L.-----Crossville  
 Mitchell, E. W.-----Crossville  
 Reed, W. A.-----North Chattanooga

### DAVIDSON COUNTY.

Altman, J. T.-----Eve Bldg., Nashville  
 Anderson, C. F.-----Lambuth Bldg.  
 Anderson, J. S.-----155 8th Ave., N.  
 Anderson, W. B.-----Lambuth Bldg.  
 Barr, Hugh-----151 7th Ave., N.  
 Barr, R. A.-----Eve Bldg.  
 Bailey, A. C.-----Jackson Bldg.  
 Bailey, Sam P.-----Jackson Bldg.

|                      |                                   |                   |                        |
|----------------------|-----------------------------------|-------------------|------------------------|
| Barnard, L. N.       | Home for Feeble Minded, Nashville | Guerin, H. C.     | Jackson Bldg.          |
| Becton, James A.     | City View Sanitarium, Nashville   | Haggard, W. D.    | Lambuth Bldg.          |
| Bell, C. B.          | 304 Chapel Ave.                   | Hale, Geo. W.     | Independent Life Bldg. |
| Bilbro, W. C., Jr.   | Lambuth Bldg.                     | Haley, Y. W.      | Hitchcock Bldg.        |
| Billington, R. W.    | Lambuth Bldg.                     | Hall, John E.     | Eve Bldg.              |
| Binkley, J. D.       | 149 7th Ave., N.                  | Hamilton, C. M.   | 147 7th Ave., N.       |
| Bishop, E. L.        | 405 7th Ave., N.                  | Handly, J. W.     | Independent Life Bldg. |
| Black, W. C.         | 117 16th Ave., N.                 | Harris, A. W.     | Lambuth Bldg.          |
| Bloomstein, Sam C.   | 142 7th Ave., N.                  | Harrington, R. A. | Jackson Bldg.          |
| Bogle, R. Boyd       | Hitchcock Bldg.                   | Hartman, M. D.    | 149 6th Ave., N.       |
| Bostelman, Ernest    | Texarkana, Ark.                   | Hasty, F. E.      | Lambuth Bldg.          |
| Bracken, H. B.       | State Hospital, Raleigh, N. C.    | Hatcher, Geo. A.  | Central Hospital       |
| Brew, James          | Jackson Bldg.                     | Head, Frank P.    | 4312 Charlotte Ave.    |
| Bryan, J. L.         | Hitchcock Bldg.                   | Herbert, R. N.    | Hitchcock Bldg.        |
| Bryan, O. N.         | Lambuth Bldg.                     | Hill, C. L.       | 142 7th Ave., N.       |
| Bryan, W. A.         | Lambuth Bldg.                     | Holcomb, G. W.    | Vendome Bldg.          |
| Bromberg, Perry      | Jackson Bldg.                     | Hollabaugh, A. N. | 112 8th Ave., S.       |
| Brower, Charles      | Jackson Bldg.                     | Horan, W. A.      | 836 Stockell St.       |
| Briggs, S. S.        | 220 Capitol Blvd.                 | House, S. J.      | Lambuth Bldg.          |
| Brown, Charles W.    | San Diego, Cal.                   | Hudson, Alberto   | Jackson Bldg.          |
| Brown, R. R.         | Lambuth Bldg.                     | Johnson, H. E.    | Lambuth Bldg.          |
| Brower, Charles      | Jackson Bldg.                     | Jones, R. L.      | City                   |
| Buckner, M. G.       | Jackson Bldg.                     | Keller, J. P.     | 142 7th Ave., N.       |
| Bunch, R. C.         | 142 7th Ave., N.                  | Kennon, W. G.     | Lambuth Bldg.          |
| Burch, L. E.         | Lambuth Bldg.                     | King, Howard      | 142 7th Ave., N.       |
| Burch, John E.       | Bellevue Hospital, N. Y.          | King, J. M.       | Lambuth Bldg.          |
| Byrd, Benj. F.       | 303 7th Ave., N.                  | Landis, R. K.     | Jackson Bldg.          |
| Caldwell, L. J.      | 142 7th Ave., N.                  | Lanier, Leon      | Lambuth Bldg.          |
| Caldwell, Jere       | Lambuth Bldg.                     | Lassiter, J. N.   | Lambuth Bldg.          |
| Caldwell, Robert     | Jackson Bldg.                     | Lee, John M.      | Lambuth Bldg.          |
| Cayce, E. B.         | Hitchcock Bldg.                   | Lentz, John J.    | Hyde's Ferry Pike      |
| Cayce, J. S.         | 142 7th Ave., N.                  | Leonard, T. A.    | Lambuth Bldg.          |
| Chamberlin, C. J.    | Hitchcock Bldg.                   | Lester, James D.  | Jackson Bldg.          |
| Coles, Van H.        | Lambuth Bldg.                     | Litterer, Henry   | Eve Bldg.              |
| Core, W. J.          | 302 6th Ave., N.                  | Litterer, Wm.     | 631 2nd Ave., S.       |
| Cowan, S. C.         | Vendome Bldg.                     | Long, Gross       | Eve Bldg.              |
| Cowden, C. W.        | Lambuth Bldg.                     | Madden, J. W.     | 169 4th Ave., N.       |
| Cox, Henry           | Eve Bldg.                         | Magee, H. C.      | New Orleans, La.       |
| Crockett, S. S.      | Jackson Bldg.                     | Magee, E. H.      | Chattanooga            |
| Crittenden, C. B.    | 405 7th Ave., N.                  | Manier, J. O.     | Lambuth Bldg.          |
| Crutchfield, Carl R. | Lambuth Bldg.                     | Marr, Harrington  | Eve Bldg.              |
| Cullum, M. M.        | Hitchcock Bldg.                   | Miller, John R.   | White's Creek, Tenn.   |
| Cullom, J. M.        | 4811 Park Ave.                    | Morgan, W. M.     | 189 8th Ave., N.       |
| Dabbs, J. W. T.      | Jackson Bldg.                     | Morrison, W. J.   | 159 8th Ave., N.       |
| Dailey, T. W.        | Lambuth Bldg.                     | Morrissey, R. G.  | 142 7th Ave., N.       |
| Davis, M. O.         | 208 8th Ave., S.                  | Morris, Henry S.  | Independent Life Bldg. |
| Davis, M. B.         | Lambuth Bldg.                     | Morris, W. J.     | 159 8th Ave., N.       |
| DeWitt, Paul         | Hitchcock Bldg.                   | Moody, J. R.      | Tuberculosis Hospital  |
| Derivaux, R. C.      | Lambuth Bldg.                     | McCabe, W. M.     | Lambuth Bldg.          |
| Dixon, W. C.         | Lambuth Bldg.                     | McClure, C. C.    | Lambuth Bldg.          |
| Douglas, A. E.       | 511 2nd Ave., S.                  | McKinney, T. D.   | Lambuth Bldg.          |
| Douglas, H. L.       | Lambuth Bldg.                     | McLaughlin, J. M. | Murfreesboro Road      |
| Dozier, Bate         | 802 Monroe St.                    | McMurray, C. S.   | Lambuth Bldg.          |
| Dozier, R. L.        | Jackson Bldg.                     | McNeil, J. P.     | Dante, Va.             |
| Dunklin, F. B.       | Lambuth Bldg.                     | Naive, J. B.      | Jackson Bldg.          |
| Edwards, L. W.       | Lambuth Bldg.                     | Neil, D. R.       | Jackson Bldg.          |
| Eve, Duncan          | Ege Bldg.                         | Nichol, A. G.     | Jackson Bldg.          |
| Eve, Duncan, Jr.     | Eve Bldg.                         | Oliver, O. A.     | Lambuth Bldg.          |
| Ezell, Hershel       | Lambuth Bldg.                     | Orr, Eugene       | Lambuth Bldg.          |
| Farmer, W. S.        | Central Hospital                  | Oughterson, W. A. | Lambuth Bldg.          |
| Fessey, W. F.        | Eve Bldg.                         | Overton, John     | Lambuth Bldg.          |
| Fenn, Joe W.         | Hitchcock Bldg.                   | Perkins, S. F.    | Lambuth Bldg.          |
| Floyd, W. O.         | Lambuth Bldg.                     | Perry, R. H.      | Jackson Bldg.          |
| Forrester, A. M.     | Lambuth Bldg.                     | Pickens, D. R.    | Lambuth Bldg.          |
| Fort, R. E.          | 302 7th Ave., N.                  | Pollard, T. G.    | Lambuth Bldg.          |
| Gaines, John A.      | Jackson Bldg.                     | Poole, G. B.      | Vendome Bldg.          |
| Gallagher, J. F.     | Jackson Bldg.                     | P'Poole, Bruce    | Lambuth Bldg.          |
| Gayden, H. C.        | Jackson Bldg.                     | Price, Geo. A.    | Lambuth Bldg.          |
| Glascow, McPheeters  | Jackson Bldg.                     | Reynolds, W. E.   | Lambuth Bldg.          |
| Gleaves, E. L.       | 210 1/2 5th Ave., N.              | Rich, Stanley L.  | Lambuth Bldg.          |
| Gilbert, J. P.       | Central State Hospital            | Roberts, E. L.    | Jackson Bldg.          |
| Goodwin, J. D.       | 153 7th Ave., N.                  | Ross, S. T.       | 142 7th Ave., N.       |
| Griffin, C. C.       | Jackson Bldg.                     | Sanders, E. M.    | 151 7th Ave., N.       |
| Grizzard, R. W.      | 302 6th Ave., N.                  | Savage, G. C.     | 165 8th Ave., N.       |
|                      |                                   | Sayers, E. A.     | Jackson Bldg.          |
|                      |                                   | Seeman, G. F.     | Lambuth Bldg.          |

|                       |                              |
|-----------------------|------------------------------|
| Sharber, A. L.        | Jackson Bldg.                |
| Shoulders, H. H.      | 149 7th Ave., N.             |
| Shoulders, H. S.      | 149 7th Ave., N.             |
| Sifford, W. R.        | Independent Life Bldg.       |
| Simons, Irving        | 406 6th Ave., N.             |
| Smith, Larkin         | 116 8th Ave., S.             |
| Spitz, Herman         | Lambuth Bldg.                |
| Stevens, John W.      | City View Sanitarium         |
| Sugg, W. D.           | Nashville General Hospital   |
| Sullivan, C. C.       | 155 8th Ave., N.             |
| Sullivan, L. E.       | Lambuth Bldg.                |
| Sullivan, W. A.       | Jackson Bldg.                |
| Sumpter, Wm. S.       | 155 8th Ave., N.             |
| Sutherland, E. A.     | Madison, Tenn.               |
| Sutton, Joseph G.     | Central State Hospital       |
| Sykes, A. T.          | Lambuth Bldg.                |
| Tanksley, W. H.       | Vendome Bldg.                |
| Tarpley, J. R.        | Lambuth Bldg.                |
| Teachout, S. R.       | Vendome Bldg.                |
| Terry, B. T.          | Vanderbilt University        |
| Tennison, Geo. F.     | Lambuth Bldg.                |
| Tharp, Milton         | Lambuth Bldg.                |
| Thatch, A. B.         | 151 7th Ave., N.             |
| Thatcher, H. S.       | Flushing, N. Y.              |
| Thomas, D. R.         | Halstead, Kans.              |
| Thompson, L. O.       | Orange, Texas                |
| Tigert, H. M.         | 142 7th Ave., N.             |
| Tucker, B. G.         | Tuberculosis Hospital        |
| Tucker, Harlin        | Vendome Bldg.                |
| Tucker, R. O.         | Vendome Bldg.                |
| Vaughn, James J.      | Lambuth Bldg.                |
| Verdel, L. F.         | 147 1/2 7th Ave., N.         |
| Warner, R. J.         | Lambuth Bldg.                |
| Watkins, J. T.        | 142 7th Ave., N.             |
| West, Olin            | 535 N. Dearborn St., Chicago |
| Whitfield, T. A.      | Jackson Bldg.                |
| Wilkerson, W. W., Jr. | 2708 Belmont Blvd.           |
| Wilson, M. C.         | Lambuth Bldg.                |
| Wilson, O. H.         | Lambuth Bldg.                |
| Witherspoon, J. A.    | Lambuth Bldg.                |
| Witherspoon, Jack     | Lambuth Bldg.                |
| Witt, W. H.           | Lambuth Bldg.                |
| Wood, Hilliard        | Independent Life Bldg.       |
| Woodring, T. V.       | 1201 Broad St.               |
| Wyatt, R. S.          | 805 Monroe St.               |
| Young, T. Hugh        | Vendome Bldg.                |
| Zerfoss, Kate Savage  | 165 8th Ave., N.             |
| Zerfoss, T. B.        | 156 8th Ave., N.             |

**DECATUR COUNTY.**

|                   |              |
|-------------------|--------------|
| Bray, F. J.       | Parsons      |
| Hufstedler, A. G. | Parsons      |
| Ingram, J. E.     | Parsons      |
| McMillan, J. G.   | Decaturville |
| McMillan, J. L.   | Decaturville |
| Rogers, Tavern    | Decaturville |

**DICKSON COUNTY.**

|                |         |
|----------------|---------|
| Beasley, R. P. | Dickson |
| Guerin, J. C.  | Slayden |
| Loggins, L. F. | Waverly |
| Spencer, H. P. | Burns   |
| Sugg, W. J.    | Dickson |
| Sugg, J. A.    | McEwen  |
| Teas, J. J.    | Waverly |
| Wall, J. Y.    | Waverly |

**DYER COUNTY.**

|                |                |
|----------------|----------------|
| Austin, D. T.  | Miston         |
| Baird, E. H.   | Dyersburg      |
| Baird, J. P.   | Dyersburg      |
| Brewer, J. D.  | Dyersburg      |
| Cherry, E. O.  | Newbern        |
| Cook, John     | Dyersburg      |
| Haskins, E. T. | Newbern        |
| Hill, L. B.    | Foxboro, Mass. |
| Holland, W. W. | Dyersburg      |
| Marr, B. G.    | Dyersburg      |

|                  |           |
|------------------|-----------|
| Motley, R. L.    | Dyersburg |
| Phillips, J. D.  | Bogota    |
| Shelton, W. G.   | Lenox     |
| Sullivan, W. O.  | Newbern   |
| Turner, C. A.    | Dyersburg |
| Turner, C. B. A. | Dyersburg |
| Walker, N. S.    | Dyersburg |
| Wynne, J. W.     | Newbern   |

**FAYETTE COUNTY.**

|                 |            |
|-----------------|------------|
| Morris, John W. | Somerville |
|-----------------|------------|

**GIBSON COUNTY.**

|                  |                  |
|------------------|------------------|
| Bennett, B. T.   | Trenton          |
| Bryant, A. J.    | Bradford         |
| Bryant, G. C.    | Milan            |
| Caldwell, B. D.  | Milan            |
| Caldwell, S. E.  | Milan            |
| Donaldson, A. A. | Trenton          |
| Ingram, M. D.    | Trenton          |
| Jackson, John    | Dyer             |
| Keeton, W. B.    | Medina           |
| McRee, W. C.     | Trenton          |
| Mackey, D. L.    | Bradford         |
| Medling, W. L.   | Dyer             |
| Murph, R. L.     | Dyer, R.F.D.     |
| Nickols, E. R.   | Bradford         |
| Oliver, G. W.    | Medina           |
| Ousler, J. W.    | Humboldt         |
| Penn, B. S.      | Humboldt         |
| Penn, G. W.      | Humboldt         |
| Rozzell, J. G.   | Gibson           |
| Skiles, A. J.    | Kenton           |
| Tyree, C. E.     | Trenton          |
| Walker, S. E.    | Kansas City, Mo. |

**GREENE COUNTY.**

|                    |                     |
|--------------------|---------------------|
| Bell, J. B.        | Greeneville, R.F.D. |
| Birght, W. M.      | Chuckey, R.F.D.     |
| Blanton, M. A.     | Mosheim             |
| Britton, F. C.     | Greeneville         |
| Brown, I. B.       | Mosheim             |
| Brumley, S. T.     | Greeneville         |
| Campbell, James T. | Greeneville         |
| Dyer, Lloyd        | Greeneville         |
| Fox, C. P.         | Greeneville         |
| Fox, C. P., Jr.    | Greeneville         |
| Hawkins, J. T.     | Greeneville, R.F.D. |
| Huffaker, R. O.    | Tusculum            |
| Jamison, A. M.     | Greeneville, R.F.D. |
| Keller, R. D.      | Greeneville         |
| Myers, E. M.       | Bulls Gap           |
| Woodyard, S. W.    | Greeneville         |

**GRUNDY COUNTY.**

|                   |            |
|-------------------|------------|
| Bryan, D. H.      | Palmer     |
| Hembree, C. W.    | Tracy City |
| Jackson, W. A.    | Tracy City |
| Lindsey, E. C.    | Tracy City |
| McCaleb, W. L.    | Coalmont   |
| Stone, W. P.      | Tracy City |
| Taylor, Thomas F. | Monteagle  |

**GILES COUNTY.**

|                     |                 |
|---------------------|-----------------|
| Abernathy, C. A.    | Pulaski         |
| Allen, A. M.        | Buford          |
| Baugh, John E.      | Elkton          |
| Blackburn, J. A.    | Pulaski         |
| Butler, G. D.       | Pulaski         |
| Copeland, W. F.     | Campbellsville  |
| Deane, A. W.        | Pulaski         |
| Edmondson, Louie E. | Bethel          |
| Fuqua, E. M.        | Pulaski         |
| Gaines, F. C.       | Pulaski, R.F.D. |
| Grimes, G. C.       | Aspen Hill      |
| Harwell, W. S.      | Frankewing      |
| Hulme, F. B.        | Pulaski         |
| Johnson, W. J.      | Frankewing      |

Lancaster, G. W.-----Pulaski, R.F.D.  
 Lancaster, J. A.-----Pulaski, R.F.D.  
 Morris, John B.-----Pulaski  
 Smith, Moulton-----Ardmore  
 Waits, G. K.-----Minor Hill  
 Waldrop, J. F.-----Lewisburg  
 Warren, R. E.-----Pulaski  
 Wright, J. B.-----Lynville

**HAMILTON COUNTY.**

Abernathy, T. E.---Vounteer, Bldg., Chattanooga  
 Abernathy, Y. L.---114 East 4th St., Chattanooga  
 Adkins, E. H.---Volunteers Bldg., Chattanooga  
 Alder, G. B.---Volunteer Bldg., Chattanooga  
 Anderson, E. B.---Hamilton Bk. Bldg., Chattanooga  
 Anderson, Wm. E.---James Bldg., Chattanooga  
 Armstrong, J. J.-----  
 -----Newell & Newell San., Chattanooga  
 Barnett, J. H.---Volunteer Bldg., Chattanooga  
 Barnett, S. G.---James Bldg., Chattanooga  
 Bibb, J. L.---Hamilton Bank Bldg., Chattanooga  
 Blackwell, O. L.-----Shepherd, Tenn.  
 Bogart, F. B.---Erlanger Hospital, Chattanooga  
 Bogart, W. M.-----  
 -----4½ E. Frazier Ave., N. Chattanooga  
 Bogart, W. G.---519 Georgia Ave., Chattanooga  
 Brooks, J. C.---Volunteer Bldg., Chattanooga  
 Brooks, L. P.---James Bldg., Chattanooga  
 Broyles, J. M.-----  
 -----3801 Ave. L., East Lake, Chattanooga  
 Broyles, J. C.-----Graysville, Tenn.  
 Bryan, Wm. E.---707 Georgia Ave., Chattanooga  
 Campbell, E. R.-----  
 -----Newell & Newell San., Chattanooga  
 Colemore, R. M.---Volunteer Bldg., Chattanooga  
 Crowell, T. C.---Volunteer Bldg., Chattanooga  
 DeLay, E. M.---Hogshead Apt., Chattanooga  
 Dickey, W. M.---Volunteer Bldg., Chattanooga  
 Eldridge, J. C., Jr.---Volunteer Bldg., Chattanooga  
 Ellis, G. Manning---Volunteer Bldg., Chattanooga  
 Fancher, H. L.---James Bldg., Chattanooga  
 Fletcher, H. Quigg---James Bldg., Chattanooga  
 Fowler, S. A.---6 W. 26th St., Chattanooga  
 Fre're, J. M.---Newell & Newell San., Chattanooga  
 Gee, J. J.---1st Nat. Bank Bldg., Chattanooga  
 Gilbert, E. A.---James Bldg., Chattanooga  
 Gurney, C. H.---554 S. Crest Road, Chattanooga  
 Hampton, H. H.---Hogshead Apt., Chattanooga  
 Harrison, E. M.---James Bldg., Chattanooga  
 Haskins, J. B.---Volunteer Bldg., Chattanooga  
 Haymore, German P.---Hogshead Apt., Chattanooga  
 Hillas, W. J.---Volunteer Bldg., Chattanooga  
 Hogshead, J. McChesney-----  
 -----Hogshead Apt., Chattanooga  
 Haller, E. N.---Volunteer Bldg., Chattanooga  
 Holman, J. H.---Hogshead Apt., Chattanooga  
 Holtzelaw, Cooper---213 E. 8th St., Chattanooga  
 Hughes, O. G.-----Ooltwah, Tenn.  
 Hysinger, R. R.---Wilder St., Chattanooga  
 Jacobs, B. L.---James Bldg., Chattanooga  
 Jenkins, E. L.-----Soddy, Tenn.  
 Johnson, J. Franklin-----  
 -----Battle Creek San., Chattanooga  
 Johnson, James L.---Volunteer Bldg., Chattanooga  
 Johnson, J. W.---Volunteer Bldg., Chattanooga  
 Johnson, Otis H.---James Bldg., Chattanooga  
 Larimore, H. P.---Volunteer Bldg., Chattanooga  
 Laws, H. A.---Hamilton Bank Bldg., Chattanooga  
 Lawwill, Stewart L.---Flatiron Bldg., Chattanooga  
 Lindsay, W. R.---Hogshead Apt., Chattanooga  
 Long, S. H.---Volunteer Bldg., Chattanooga  
 Macquillan, J. W.-----  
 -----Hamilton Bank Bldg., Chattanooga  
 Marchbanks, S. S.-----  
 -----Hamilton Bank Bldg., Chattanooga  
 McGhee, J. B.---224½ East Main St., Chattanooga  
 McIsaac, Fred C.---James Bldg., Chattanooga

McPheeters, J. D. L.-----  
 -----Volunteer Bldg., Chattanooga  
 Meacham, M. A.-----  
 Moffitt, J. A.---Van Deman Bldg., Chattanooga  
 Nelson, J. E.---3915½ St. Elmo Ave., Chattanooga  
 Newell, E. D.---Newell & Newell San., Chattanooga  
 Newell, E. T.---Newell & Newell San., Chattanooga  
 Orr, W. M.-----  
 -----44520 Highland Park, Alton Park, Tenn.  
 Patterson, A. M.---Erlanger Hospital, Chattanooga  
 Patton, E. W.---Hamilton Bank Bldg., Chattanooga  
 Purcell, H. H.---Volunteer Bldg., Chattanooga  
 Reisman, E. E.---Van Deman Bldg., Chattanooga  
 Renner, Herman---Volunteer Bldg., Chattanooga  
 Revington, J. H.---Volunteer Bldg., Chattanooga  
 Roberts, G. M.---Volunteer Bldg., Chattanooga  
 Shelton, D. C.-----Jasper, Tenn.  
 Shumaker, Leopold---Volunteer Bldg., Chattanooga  
 Skelton, C. A.---Hamilton Bk. Bldg., Chattanooga  
 Smith, Frank T.---704 Oak St., Chattanooga  
 Smith, James A.---908 Oak St., Chattanooga  
 Stapp, Fred B.---9½ East 8th St., Chattanooga  
 Steele, J. B.---Volunteer Bldg., Chattanooga  
 Steele, Williard---Hamilton Bk. Bldg., Chattanooga  
 Stem, L. T.---Volunteer Bldg., Chattanooga  
 Sullivan, Baynard---Fort Bayard, New Mexico  
 Vaden, W. E.---4411 St. Elmo Ave., Chattanooga  
 Wallace, Raymond-----  
 -----Hamilton Bank Bldg., Chattanooga  
 Webb, J. M.-----Ooltwah, Tenn.  
 Wert, B. S.---Van Deman Bldg., Chattanooga  
 West, George R.---Volunteer Bldg., Chattanooga  
 West, Lyle B.---Volunteer Bldg., Chattanooga  
 Willbanks, G. P.---Rossville, Georgia  
 Williams, Dan. N.---Volunteer Bldg., Chattanooga  
 Williams, G. Victor-----  
 -----Van Deman Bldg., Chattanooga  
 Winter, W. J.---Volunteer Bldg., Chattanooga  
 Wise, E. B.---James Bldg., Chattanooga  
 Woolford, J. S. B.---Rosswell, New Mexico  
 Yarnell, S. J.---112½ East 7th St., Chattanooga

**HAMBLEN COUNTY.**

Brock, P. L.-----Morristown  
 Campbell, J. F.-----Morristown  
 Carroll, C. T.-----Morristown  
 Henderson, P. L.-----Morristown  
 Howell, W. E.-----Morristown  
 Idol, J. H.-----Tate  
 Millegan, L. H.-----Morristown  
 Painter, F. F.-----Morristown  
 Pangle, H. G.-----Morristown  
 Pierce, J. W.-----Tate  
 Ruble, W. G.-----Morristown  
 Ryburn, S. M.-----Morristown  
 Shields, D. E.-----Morristown  
 Smithers, G. W.-----Rutledge  
 Tomlinson, O. R.-----Tate Springs

**HARDEMAN COUNTY.**

Alexander, J. Y.-----Pocahontas  
 Cocke, E. W.-----Bolivar  
 Curry, G. B.-----Bolivar  
 Guttery, W. D.-----Bolivar  
 Miesch, L. A.-----Bolivar  
 Phillips, W. S.---Grand Junction  
 Pope, L.-----Hickory Valley  
 Siler, W. H.-----Silterton  
 Tate, R. W.-----Bolivar  
 Timmons, E. R.-----Grand Junction

**HAYWOOD COUNTY.**

Chapman, T. C.-----Brownsville  
 Edwards, J. L.-----Brownsville  
 Miller, W. R.-----Brownsville  
 Mulherin, E. R.-----Brownsville  
 Mulherin, G. G.-----Brownsville

Scott, Glen T.-----Brownsville  
Sorrelle, A. H.-----Brownsville

**HAWKINS COUNTY.**

Armstrong, W. H.-----Rogersville  
Baker, J. K.-----Mooresburg  
Elam, K. P.-----Persia  
Lyons, W. C.-----Surgoinsville  
Lyons, G. C.-----Surgoinsville  
Lyons, J. S.-----Rogersville  
Miller J. E.-----Rogersville  
Patton, E. A.-----Pressmen Home  
Reecer, Guy M.-----Rogersville  
Roty, R. A.-----Rogersville  
Sweeney, O. M.-----Treadway

**HENDERSON COUNTY.**

Arnold, J. M.-----Lexington  
Bolen, C. E.-----Wildersville  
Boyd, W. P.-----Yuma  
Bradfield, D. W.-----Wildersville  
Brandon, G. A.-----Lexington  
Brazelton, S. H.-----Sardis  
Davidson, R. G.-----Lexington  
England, J. H.-----Luray  
Goff, J. F.-----Chesterfield  
Hendrix, J. W.-----Parsons  
Huntsman, W. F.-----Lexington  
Johnson, C. H.-----Lexington  
Joyce, J. P.-----Lexington  
Kelton, J. T.-----Saltillo  
Milam, R. H.-----Lexington  
Parker, S. T.-----Lexington  
Powers, J. E.-----Lexington  
Watson, W. T.-----Lexington  
Wylie, R. L.-----Scotts Hill

**HENRY COUNTY.**

Abernathy, Gill-----Paris  
Burrus, Swan-----Paris  
Freeman, J. T.-----Paris  
Hagler, W. Q.-----Mansfield  
Hendley, Chas.-----Paris  
McSwain, George R.-----Paris  
McSwain, J. H.-----Paris  
Oliver, A. A.-----Paris  
Perry, R. J.-----Paris, R. F. D.  
Plotkins, Edward-----Linden  
Scruggs, Elroy-----Paris  
Wiggins, M. C.-----Paris

**HICKMAN COUNTY.**

Beasley, John S.-----Centerville  
Cagle, W. D.-----Loberville  
Edwards, W. K.-----Centerville  
Stevenson, C. V.-----Centerville  
Thompson, J. W.-----Centerville  
Webb, W. D.-----Loberville

**JACKSON COUNTY.**

Anderson, L. R.-----Gainsboro, R.F.D.  
Gaw, R. C.-----Gainsboro  
McCain, N. M.-----Gainsboro, R.F.D.  
Quarles, J. D.-----Whitleyville  
Reeves, C. E.-----Gainesboro

**JEFFERSON COUNTY.**

Caldwell, T. A.-----Jefferson City  
Cline, B. E.-----Strawberry Plains  
Doane, N. C.-----New Market  
French, T. R.-----Dandridge  
Stiltner, H. F.-----Dandridge  
Taylor, W. H.-----New Market  
Tarr, H. L.-----Jefferson City  
Tinsley, P. A.-----Dandridge  
Tittsworth, B. M.-----Jefferson City

**KNOX COUNTY.**

Acuff, Herbert-----Market St., Knoxville  
Acuff, S. D.-----N. Central Ave., Knoxville  
Alexander, Eban-----Holston Bank Bldg., Knoxville  
Austin, W. S.-----W. Church St., Knoxville  
Barry, Tom-----Empire Bldg., Knoxville  
Barbee, B. T.-----Holston Bank Bldg., Knoxville  
Black, M. L.-----Holston Bank Bldg., Knoxville  
Blalock, L. O.-----Empire Bldg., Knoxville  
Bolin, H. J.-----Mascot, Tenn.  
Bosworth, B. D.-----Empire Bldg., Knoxville  
Bowen, William-----Holston Bank Bldg., Knoxville  
Boise, W. A.-----W. Church St., Knoxville  
Casenburg, W. G.-----N. Broadway, Knoxville  
Casenburg, S. F.-----Medical Bldg., Knoxville  
Carroll, H. L.-----Arnstein Bldg., Knoxville  
Carmichael, C. J.-----Walnut St., Knoxville  
Catlett, W. A.-----Holston Bank Bldg., Knoxville  
Cates, B. B.-----W. Clinch St., Knoxville  
Christenberry, H. E.-----W. Church St., Knoxville  
Christenberry, W. F.-----Lonsdale  
Copenhaver, K. C.-----Burwell Bldg., Knoxville  
Copenhaver, M. M.-----Burwell Bldg., Knoxville  
Cochrane, W. R.-----Walnut St., Knoxville  
Cunningham, H. K.-----W. Church St., Knoxville  
Delpeuch, William-----McGhee St., Knoxville  
DePue, R. V.-----W. Church St., Knoxville  
DeSautelle, W. T.-----Holston Bank Bldg., Knoxville  
Donnahue, R. E.-----Arnstein Bldg., Knoxville  
Drake, C. M.-----W. Clinch St., Knoxville  
Ellis, J. J.-----Empire Bldg., Knoxville  
Fitzgerald, T. F.-----R.F.D., Knoxville  
Ford, E. H.-----Petros, Tenn.  
Ford, Earl-----Acuff Bldg., Knoxville  
Garrison, A. R.-----Byington, Tenn.  
Goetz, H. E.-----Walnut St., Knoxville  
Greer, J. J.-----Walnut St., Knoxville  
Greer, W. A.-----Holston Bank Bldg., Knoxville  
Guyes, E. A.-----Walnut St., Knoxville  
Harrison, Benj. I.-----Market St., Knoxville  
Haun, L. A.-----Holston Bank Bldg., Knoxville  
Henderson, J. D.-----Holston Bank Bldg., Knoxville  
Henderson, G. Victor-----Holston Bk. Bldg., Knoxville  
Herrell, M. G.-----Powell Station, Tenn.  
Hill, Jesse C.-----Bearden, Tenn.  
Hill, Oliver, W.-----W. Church St., Knoxville  
Hodge, S. H.-----Walnut St., Knoxville  
Howard, B. V.-----W. Church St., Knoxville  
Holloway, V. D.-----Walnut St., Knoxville  
Jones, C. B.-----Holston Bank Bldg., Knoxville  
Jones, Thos.-----Ap. R., Walnut St., Knoxville  
Kelso, H. J.-----W. Church St., Knoxville  
Kern, A. G.-----Walnut St., Knoxville  
Keeling, J. H.-----W. Church St., Knoxville  
Kincaid, J. H.-----W. Church St., Knoxville  
Kitts, H. L.-----Acuff Bldg., Knoxville  
Kyle, A. G.-----Walnut St., Knoxville  
Lane, V. S.-----Union Ave., Knoxville  
Layman, R. B.-----Burwell Bldg., Knoxville  
Lea, J. Marshal-----Arnstein Bldg., Knoxville  
Leach, Robt. S.-----Acuff Bldg., Knoxville  
Lee, M. H.-----Bearden, Tenn.  
LeTellier, F. S.-----W. Church St., Knoxville  
Long, H. C.-----W. Church St., Knoxville  
Lucus, W. A.-----Acuff Bldg., Knoxville  
Luttrell, Walter-----McTownlee Bldg., Knoxville  
Lynn, W. N.-----Arnstein Bldg., Knoxville  
Lyons, Joe-----Gay St., Knoxville  
Martin, Carl-----Fountain City, Tenn.  
Mason, E. C.-----Gay St., Knoxville  
McC Campbell, H. H.-----Walnut St., Knoxville  
McClain, H. T.-----Gay St., Knoxville  
McClain, W. C.-----Gay St., Knoxville  
McCammon, W. C.-----Arnstein Bldg., Knoxville  
McCrary, R. F.-----Market St., Knoxville  
McDonald, Dewitt-----Gay St., Knoxville

McIlwaine, Richard-----W. Church St., Knoxville  
 McReynolds, R. L.-----Holston Bank Bldg., Knoxville  
 Miller, S. R.-----W. Church St., Knoxville  
 Monger, Ralph-----City Hospital, Cleveland, O.  
 Mooney, C. F.-----Market St., Knoxville  
 Nash, W. S.-----Walnut St., Knoxville  
 Newman, R. H.-----Acuff Bldg., Knoxville  
 Neil, J. B.-----McTownlee Bldg., Knoxville  
 Ogle, B. L.-----Holston Bank Bldg., Knoxville  
 Oppenheimer, R. P.-----W. Church St., Knoxville  
 Parker, J. B.-----Inskip, Tenn.  
 Patterson, Reese-----Acuff Bldg., Knoxville  
 Patterson, Robt.-----Acuff Bldg., Knoxville  
 Peters, H. L.-----Gay St., Knoxville  
 Peters, S. B.-----Medical Bldg., Knoxville  
 Phlegar, Robt.-----Washburn, Tenn.  
 Potter, W. W.-----Arnstein Bldg., Nashville  
 Rain, C. E.-----Empire Bldg., Knoxville  
 Reaves, Charles-----W. Cumberland Ave., Knoxville  
 Reaves, Robt. G.-----W. Cumberland Ave., Knoxville  
 Richards, W. D.-----Arnstein Bldg., Knoxville  
 Ristine, C. E.-----Box 75, Knoxville  
 Roberts, M. S.-----Arnstein Bldg., Knoxville  
 Rodgers, Olin-----Holston Bank Bldg., Knoxville  
 Rule, A. L.-----Arnstein Bldg., Knoxville  
 Shelton, W. A.-----Acuff Bldg., Knoxville  
 Sheddian, L. L.-----Burwell Bldg., Knoxville  
 Skaggs, J. S.-----Seth, W. Va.  
 Smith, R. E. Lee-----Bearden, Tenn.  
 Smith, V. I.-----Holston Bank Bldg., Knoxville  
 Stone, G. W.-----Hutson Bldg., Knoxville  
 Swafford, J. B.-----Bearden, Tenn.  
 Thielen, J. B.-----Holston Bank Bldg., Knoxville  
 Tillery, J. P.-----Holston Bank Bldg., Knoxville  
 VanderGriff, J. M. J.-----Fountain City, Knoxville  
 Wallace, W. L.-----N. Broadway, Knoxville  
 West, J. Q. A.-----Walnut St., Knoxville  
 White, W. H. L.-----Walnut St., Knoxville  
 Williams, D. H.-----Walnut St., Knoxville  
 Wood, E. G.-----Burwell Bldg., Knoxville  
 Wood, R. B.-----Burwell Bldg., Knoxville  
 Wood, W. P.-----Burwell Bldg., Knoxville  
 Wright, M. C.-----Empire Bldg., Knoxville  
 Young, R. M.-----Walnut St., Knoxville  
 Zemp, E. R.-----Walnut St., Knoxville

#### LAKE COUNTY.

Alexander, W. S.-----Ridgley  
 Alexander, J. D.-----Tiptonville  
 Craften, J. A.-----Phillippi  
 Griffin, J. T.-----Los Angeles, Calif.  
 Griffin, R. B.-----Ridgley  
 Griffin, R. W.-----Ridgley  
 Jones, J. A.-----Wynnborg  
 Kelton, E. T.-----Tiptonville  
 Summers, W. L.-----Ridgley

#### LAUDERDALE COUNTY.

Chapman, S. T.-----Halls  
 Dunavant, J. L.-----Henning  
 Glenn, S. M.-----Ripley, R.F.D.  
 Hall, Wm.-----Halls, R.F.D.  
 Lackey, J. B.-----Ripley  
 Lackey, J. H.-----Ripley  
 Lewis, J. R.-----Ripley  
 Lusk, S. M.-----Ripley  
 Massengill, A. P.-----Halls  
 Miller, T. E.-----Ripley, R.F.D.  
 Pipkin, T. F.-----Henning  
 Sanford, J. W.-----Ripley  
 Sanford, W. C.-----Ripley  
 Sanford, W. V.-----Ripley

#### LAWRENCE COUNTY.

Cole, A. D.-----Loretto  
 Danley, J. W.-----Lawrenceburg  
 Ethridge, E. H.-----Loretto

Harris, L. C.-----Leoma  
 McAmis, T. A.-----Lawrenceburg  
 Neal, W. H.-----Lawrenceburg  
 Stockard, T. J.-----Lawrenceburg  
 Womack, C. M.-----Lawrenceburg  
 Yeiser, Ed.-----Lawrenceburg

#### LOUDON COUNTY.

Eblen, J. G.-----Lenoir City  
 Hall, G. M.-----Lenoir City  
 Harrison, Arthur-----Loudon  
 Hickman, T. J.-----Lenoir City  
 Leeper, J. T.-----Lenoir City  
 Padgett, W. D.-----Lenoir City  
 Robinson, Halbert-----Loudon

#### LINCOLN COUNTY.

Anderson, J. M.-----Flat Creek, R.F.D.  
 Blair, E. K.-----Fayetteville  
 Bryant, J. D.-----Fayetteville, R.F.D.  
 Cannon, W. F.-----Fayetteville  
 Farrar, J. P.-----Fayetteville  
 Galloway, R. K.-----Coldwater  
 Goodner, D. M.-----Fayetteville  
 Goodrich, C. L.-----Fayetteville  
 Graham, J. T.-----Mulberry, R.F.D.  
 Griffith, A. L.-----Elora  
 Hardin, D. T.-----Fayetteville  
 Holland, E. F.-----Mulberry  
 Joplin, W. S.-----Petersburg  
 Maddox, John-----Taft, R.F.D.  
 McRady, F. S.-----Petersburg  
 Patrick, T. A.-----Fayetteville  
 Shelton, J. M.-----Kelso  
 Wyatt, J. M.-----Fayetteville  
 Yearwood, A. L.-----Fayetteville

#### MACON COUNTY.

Allen, M. H.-----LaFayette  
 East, Patterson-----LaFayette  
 Freeman, J. Y.-----LaFayette, R. F.D.  
 Hesson, H. C.-----Red Boiling Springs  
 Howser, D. D.-----LaFayette  
 Kirby, A. Y.-----LaFayette, R.F.D.  
 Tucker, W.W.-----LaFayette, R.F.D.

#### MADISON COUNTY.

Anderson, J. G.-----Luray  
 Arnold, B. C.-----Jackson  
 Arnold, J. M.-----Jackson  
 Blackmon, John A.-----Jackson  
 Brasher, G. W.-----Jackson  
 Brown, R. S.-----Jackson  
 Clarke, A. H.-----Jackson  
 Cottongim, J. C.-----Bemis  
 Crook, J. L.-----Jackson  
 Curry, J. M.-----Mercer  
 Dancy, A. B.-----Jackson  
 Duckworth, W. C.-----Jackson  
 Eason, W. B.-----Jackson  
 Fields, James L.-----Jackson  
 Fitts, W. T.-----Jackson  
 Gouer, Earl-----Jackson  
 Green, R. L.-----Oakfield  
 Hamilton, F. B.-----Jackson  
 Hawkins, Herman-----Jackson  
 Hearn, R. S.-----Pinson  
 Herron, J. T.-----Jackson  
 Herron, S. M.-----Jackson, R.F.D.  
 Hopper, J. D.-----Jackson, R.F.D.  
 Jones, G. F.-----Jackson, R.F.D.  
 Jones, H. L.-----Jackson  
 McClaran, James W.-----Jackson  
 Murtaugh, F. M.-----Jackson  
 Rochelle, W. F.-----Jackson  
 Saunders, W. C.-----Jackson  
 Waller, C. P.-----Jackson

Waller, E. E.-----Spring Creek  
 Webb, C. F.-----Jackson  
 Webb, L. L.-----Carroll  
 White, R. B.-----Jackson  
 Williamson, G. L.-----Jackson

**MARSHALL COUNTY.**

Culberson, N. H.-----Chapel Hill  
 Dryden, D. M.-----Petersburg  
 Eatherly, W. T.-----Chapel Hill  
 Gault, F. H.-----Cornersville  
 Hardison, C. C.-----Lewisburg  
 Hardison, J. A.-----Lewisburg  
 Hardison, S. T.-----Lewisburg  
 Marsh, C. P.-----Petersburg  
 Moffitt, S.-----Cornersville  
 Reed, J. W.-----Belfast  
 Reed, T. E.-----Lewisburg  
 Sharp, W. T.-----Farmington  
 White, J. B.-----Lewisburg  
 White, Garrett-----Chapel Hill  
 Womach, W. C.-----Lewisburg

**MAURY COUNTY.**

Anderson, H. O.-----Williamsport  
 Beasley, M. A.-----Hampshire  
 Biddle, P. D.-----Columbia  
 Black, W. E.-----Columbia  
 Cook, M. M.-----Santa Fe  
 Covey, J. S.-----Glendale  
 English, G. C.-----Mt. Pleasant  
 Faucett, P. H.-----Columbia  
 Fowler, C. O.-----Spring Hill  
 Jones, J. H.-----Mt. Pleasant  
 Kittrell, W. H.-----Mt. Pleasant  
 Perry, R. S.-----Columbia  
 Pillow, Robert-----Columbia  
 Pillow, Robert Jr.-----Columbia  
 Porter, O. J.-----Columbia  
 Ragsdale, L. E.-----  
 -----Home for Feeble Minded, Nashville  
 Ragsdale, E. M.-----Santa Fe  
 Sheddan, W. K.-----Columbia  
 Walker, M. F.-----Santa Fee  
 Walton, C. D.-----Mt. Pleasant  
 Webb, W. R.-----Hampshire  
 Wilkes, J. W.-----Columbia  
 Williamson, Geo. C.-----Columbia  
 Woodard, B. H.-----Spring Hill  
 Yeiser, Watt-----Columbia

**MONROE COUNTY.**

Arrants, W. H.-----Sweetwater  
 Bagwell, B. W.-----Madisonville  
 Barnes, L. L.-----Sweetwater  
 Hardin, J. A.-----Sweetwater  
 Kimbrough, R. C.-----Madisonville  
 Leonard, W. W.-----Tellico Plains  
 McClain, W. A.-----Sweetwater  
 McCollum, J. A.-----Vonore  
 Roberts, T. M.-----Sweetwater  
 Shearer, H. C.-----Madisonville

**MONTGOMERY COUNTY.**

Brandau, George-----Clarksville  
 Brandau, J. W.-----Clarksville  
 Edmondson, H. H.-----Clarksville  
 Graham, R. M.-----Clarksville  
 Hughes, M. L.-----Clarksville  
 Hunt, I. E.-----Clarksville  
 Lahiff, J. B.-----Clarksville  
 Ledbetter, John-----Clarksville  
 Macon, R. B.-----Clarksville  
 Neblett, L. L.-----Clarksville  
 Nesbitt, H. A.-----Clarksville  
 Runyon, Bryce-----Clarksville  
 Runyon, H. A.-----Clarksville  
 Shelby, M. L.-----Clarksville  
 Vaughn, Geo.-----Clarksville

**McNAIRY COUNTY.**

Barnes, W. M.-----Finger  
 Davis, J. R.-----Union City  
 Doty, O. C.-----Savannah  
 Howell, Gilbert-----Stantonville  
 Kendrick, R. M.-----Selmer  
 Kirkland, Thomas A.-----Binghamton  
 Sanders, E. G.-----Stantonville  
 Sanders, H. C.-----Selmer  
 Smith, E. M.-----Bethel Springs  
 Smith, J. R.-----Selmer  
 Wallace, W. W.-----Selmer

**McMINN COUNTY.**

Abell, W. J.-----Decatur  
 Arrants, W. R.-----Athens  
 Brindle, S. P.-----Englewood  
 Brock, R. A.-----Athens  
 Copenhaver, L. A.-----Englewood  
 Duboise, H. V.-----Athens  
 Kensinger, E. C.-----Athens  
 McGahhey, Joseph-----Niota  
 Moore, W. S.-----Etowah  
 Nankeville, James R.-----Athens  
 Nichols, F. O.-----Etowah  
 Nichols, J. O.-----Etowah  
 Ogle, L. C.-----Etowah  
 Proudfoot, James L.-----Athens  
 Stanton, Geo. W.-----Athens  
 Taylor, H. F.-----Athens

**OVERTON COUNTY.**

Breeding, W. M.-----Livingston  
 Brown, W. M.-----Hilham  
 McDonald, J. T.-----Nettle Carrier  
 Moore, J. N.-----Crawford  
 Qualls, A. B.-----Livingston

**OBION COUNTY.**

Blanton, M. A.-----Union City  
 Boaz, L. D.-----Harris  
 Boswell, E. A.-----Troy  
 Carlton, J. D.-----Union City  
 Hibbitts, J. B.-----Union City  
 Howard, J. A.-----McConnell  
 Latimer, R. G.-----Union City  
 Marshall, C. C.-----Hornbeak  
 Mulherin, E. L.-----Dyersburg  
 Park, Ira-----Union City  
 Prather, P. W.-----Woodland Mills  
 Roberts, W. F.-----Troy  
 Sharpe, J. B.-----Union City  
 Watson, F. W.-----Union City  
 White, E. H.-----Rives

**PUTNAM COUNTY.**

Denton, Samuel-----Buffalo Valley  
 Dyer, Lyer-----Cookeville  
 Freeman, L. M.-----Granville  
 Howard, W. A.-----Cookeville  
 Millis, R. H.-----Baxter  
 Moore, J. T.-----Algood  
 Shipley, Z. L.-----Cookeville  
 Storie, J. R.-----Cookeville  
 Trapps, J. S.-----Sparata, R.F.D.  
 Wheeler, J. Mac.-----Baxter

**POLK COUNTY.**

Akin, E. M.-----Etowah  
 Geisler, F. O.-----Isabella  
 Gilliam, W. Y.-----Copperhill  
 Guinn, A. J.-----Ducktown  
 Hicks, U. J.-----Copperhill  
 Hyde, H. P.-----Copperhill  
 Kimsey, F. M.-----Ducktown  
 Kimsey, L. E.-----Ducktown  
 Kimsey, W. W.-----Ducktown  
 Lewis, A. W.-----Copperhill  
 Strauss, C. W.-----Copperhill

**ROBERTSON COUNTY.**

|                 |             |
|-----------------|-------------|
| Connell, J. R.  | Adams       |
| Dye, W. B.      | Springfield |
| Fyke, W. F.     | Springfield |
| Freeman, J. S.  | Springfield |
| Jones, G. R.    | Orlando     |
| Mathews, R. L.  | Springfield |
| Padfield, J. H. | Springfield |
| Porter, W. W.   | Springfield |
| Reeves, J. H.   | Springfield |
| Rude, W. S.     | Ridgetop    |
| Rudolph, C. E.  | Springfield |
| Woodruff, S. T. | Ridgetop    |

**ROANE COUNTY.**

|                  |                |
|------------------|----------------|
| Carr, J. H.      | Oakdale        |
| Carr, Hy. M.     | Harriman       |
| Clack, J. M.     | Rockwood       |
| Clack, W. S.     | Rockwood       |
| Fly, J. C.       | Kingston       |
| Gallion, W. E.   | Oakdale        |
| Hill, W. W.      | Harriman       |
| McGill, T. M.    | Harriman       |
| Neergaard, F. A. | Harriman       |
| Phillips, T. H.  | Rockwood       |
| Roberts, John    | Kingston       |
| Sewell, J. A.    | Rockwood       |
| Smith, T. L.     | Rockwood       |
| Waller, J. J.    | Oliver Springs |
| Wilson, J. C.    | Rockwood       |
| Wilson, G. E.    | Rockwood       |
| Zirkle, G. P.    | Kingston       |

**RHEA COUNTY.**

|                 |             |
|-----------------|-------------|
| Broyles, A. C.  | Dayton      |
| Cusick, W. M.   | Dayton      |
| Jones, J. L.    | Dayton      |
| Johnson, G. E.  | Dayton      |
| McDonald, W. B. | Spring City |
| Register, J. B. | Spring City |
| Thomison, W. F. | Dayton      |

**RUTHERFORD COUNTY.**

|                 |                      |
|-----------------|----------------------|
| Adams, J. F.    | Bradyville           |
| Allen, E. B.    | Murfreesboro         |
| Allen, J. S.    | Murfreesboro         |
| Campbell, V. S. | Murfreesboro         |
| Earthman, V. K. | Murfreesboro         |
| Gott, J. R.     | Murfreesboro         |
| Gordan, A. N.   | Fosterville          |
| Hall, J. D.     | Readyville           |
| Harris, J. T.   | Walter Hill          |
| Huff, J. D.     | Readyville           |
| Huff, D. V.     | Christiana           |
| Jamison, A. J.  | Murfreesboro         |
| Kelton, J. C.   | Lascassas            |
| McCrary, M. B.  | Woodbury             |
| McKnight, B. R. | Auburtnow            |
| Murfree, M. B.  | Murfreesboro         |
| Ousley, B. L.   | Christiana           |
| Overall, J. C.  | Murfreesboro         |
| Robinson, W. T. | Murfreesboro         |
| Rucker, J. J.   | Overall              |
| Scott, J. A.    | Murfreesboro         |
| Smith, S. B.    | Overall              |
| Smoot, T. M.    | Woodbury             |
| White, B. N.    | Murfreesboro         |
| Wiles, S. L.    | Murfreesboro, R.F.D. |

**SEVIER COUNTY.**

|              |              |
|--------------|--------------|
| Ogle, Ashley | Sevierville  |
| Ogle, J. W.  | Pigeon Forge |

**SCOTT COUNTY.**

|                 |            |
|-----------------|------------|
| Boyatt, F. M.   | Neida      |
| Foster, J. I.   | Huntsville |
| Foust, W. W.    | Robbins    |
| McDonald, B. L. | New River  |

|                  |           |
|------------------|-----------|
| Mullins, L. M.   | New River |
| Phillips, Pitney | Glen Mary |
| Phillips, T. L.  | Oneida    |
| Thompson, M. E.  | Oneida    |

**SHELBY COUNTY.**

|                    |                                      |
|--------------------|--------------------------------------|
| Abernathy, Shields | Exchange Bldg., Memphis              |
| Adams, J. C.       | Shrine Bldg., Memphis                |
| Alford, W. G.      | Mallory Ave., Memphis                |
| Allen, C. D.       | Randolph Bldg., Memphis              |
| Anderson, E. L.    | Bk. of Commerce Bldg., Memphis       |
| Anderson, W. S.    | Bk. of Commerce Bldg., Memphis       |
| Ankerson, G. E.    | Exchange Bldg., Memphis              |
| Andrews, J. L.     | Central Bank Bldg., Memphis          |
| Anthony, D. H.     | Exchange Bldg., Memphis              |
| Ayers, J. C.       | Exchange Bldg., Memphis              |
| Bailey, C. O.      | Mallory Ave., Memphis                |
| Bailey, J. M.      | Baptist Hospital, Memphis            |
| Barbee, Herbert    | Goodwyn Institute, Memphis           |
| Barton, J. L.      | Pathological Institute, Memphis      |
| Baskins, L. S.     | Exchange Bldg., Memphis              |
| Beauchamp, J. L.   | 6th and Chelsea Ave., Memphis        |
| Bethea, W. R.      | Baptist Hospital, Memphis            |
| Biggs, J. M.       | Madison Ave. Bldg., Memphis          |
| Black, W. T.       | Exchange Bldg., Memphis              |
| Blackburn, E. C.   | Randolph Bldg., Memphis              |
| Blassingame, C. D. | 20 S. Dunlap St., Memphis            |
| Blecker, A. L.     | Union & Planters Bank Bldg., Memphis |

|                       |                                 |
|-----------------------|---------------------------------|
| Blue, J. B.           | Exchange Bldg., Memphis         |
| Blue, W. B.           | Bank of Commerce Bldg., Memphis |
| Bocellato, S. L.      | Un. & Plant. Bk. Bldg., Memphis |
| Bodley, J. W.         | Bank of Commerce Bldg., Memphis |
| Bolton, Leslie        | Exchange Bldg., Memphis         |
| Boyd, L. F.           | Exchange Bldg., Memphis         |
| Braun, W. T.          | Exchange Bldg., Memphis         |
| Brewer, W. A.         | Goodwyn Institute, Memphis      |
| Brisson, S. N.        | Un. & Plant. Bk. Bldg., Memphis |
| Bronstein, J. H.      | Exchange Bldg., Memphis         |
| Buck, K. M.           | Central Bank Bldg., Memphis     |
| Bunting, R. C.        | Central Bank Bldg., Memphis     |
| Burchart, Selmar      | Exchange Bldg., Memphis         |
| Burns, C. C.          | Porter Bldg., Memphis           |
| Burns, W. B.          | Porter Bldg., Memphis           |
| Bush, A. P.           | Lewisburg, Tenn.                |
| Butler, A. H.         | Exchange Bldg., Memphis         |
| Campbell, E. G.       | Central Bank Bldg., Memphis     |
| Campbell, W. C.       | 869 Madison Ave., Memphis       |
| Carter, J. H.         | Un. & Plant. Bk. Bldg., Memphis |
| Carter, J. P.         | Un. & Plant. Bk. Bldg., Memphis |
| Chapman, L. H.        | Exchange Bldg., Memphis         |
| Chaffee, C. A.        | Cordova, Tenn.                  |
| Chaffee, C. C.        | Brunswick, Tenn.                |
| Chrisler, J. A.       | Exchange Bldg., Memphis         |
| Christler, J. A., Jr. | Exchange Bldg., Memphis         |
| Chilton, C. M.        | Exchange Bldg., Memphis         |
| Clark, J. C.          | Exchange Bldg., Memphis         |
| Clark, J. E.          | Forrest Hill, Tenn.             |
| Clary, W. F.          | Goodwyn Institute, Memphis      |
| Clifton, Joe          | Bank of Commerce Bldg., Memphis |
| Colbert, W. C.        | Central Bank Bldg., Memphis     |
| Coley, S. W.          | 20 S. Dunlap St., Memphis       |
| Collier, Casa         | Exchange Bldg., Memphis         |
| Collins, J. H.        | Central Bank Bldg., Memphis     |
| Cooper, A. F.         | Bank of Commerce Bldg., Memphis |
| Conley, H. P.         | Bank of Commerce Bldg., Memphis |
| Coopedge, T. N.       | Exchange Bldg., Memphis         |
| Coors, G. A.          | 293 Hernando, Memphis           |
| Cullings, J. J.       | Central Bank Bldg., Memphis     |
| Davenport, R. R.      | Bk. of Com. Bldg., Memphis      |
| DeLoach, A. B.        | Madison Ave. Bldg., Memphis     |
| Demarco, V. J.        | Goodwyn Institute, Memphis      |
| Dickson, Harry        | Central Bank Bldg., Memphis     |
| Dinsmore, W. T.       | Florida & Gage Ave., Memphis    |
| Douglas, J. J.        | Un. & Plant. Bk. Bldg., Memphis |
| Drake, J. R.          | Police Station, Memphis         |

|                    |                                  |
|--------------------|----------------------------------|
| Duncan, I. G.      | Bank of Commerce Bldg., Memphis  |
| Durrett, J. J.     | Court House, Memphis             |
| Durley, Howard     | Whitehaven, Tenn.                |
| Edwards, C. W.     | Exchange Bldg., Memphis          |
| Edwards, S. L.     | Randolph Bldg., Memphis          |
| Elcan, P. D.       | 293 S. 3rd Ave., Memphis         |
| Ellett, E. C.      | Exchange Bldg., Memphis          |
| Evans, S. S.       | Exchange Bldg., Memphis          |
| Everett, H. B.     | Binghamton, Tenn.                |
| Fagin, Robert      | Exchange Bldg., Memphis          |
| Farrington, P. M.  | Exchange Bldg., Memphis          |
| Feldman, E.        | Gary, Indiana                    |
| Flaniken, R. B.    | 906 Chelsea, Memphis             |
| Fleming, J. S.     | Exchange Bldg., Memphis          |
| Fiedler, F. W.     | Exchange Bldg., Memphis          |
| Fisher, J. B.      | Randolph Bldg., Memphis          |
| Fontaine, B. W.    | Central Bank Bldg., Memphis      |
| Francis, E. E.     | Central Bank Bldg., Memphis      |
| Fraser, J. F.      | Exchange Bldg., Memphis          |
| French, J. E.      | 2098 Court St., Memphis          |
| Galloway, David    | Bank of Com. Bldg., Memphis      |
| Gartley, George    | Goodwyn Institute, Memphis       |
| Gerino, G. B.      | Box 571, Houston, Texas          |
| Glover, C. H.      | Exchange Bldg., Memphis          |
| Goltman, M.        | Bank of Commerce Bldg., Memphis  |
| Gragg, W. H.       | Broad St., Memphis               |
| Graham, Frank      | Madison Ave. Bldg., Memphis      |
| Graves, W. R.      | Exchange Bldg., Memphis          |
| Haase, Marcus      | Exchange Bldg., Memphis          |
| Hall, E. R.        | Exchange Bldg., Memphis          |
| Ham, E. C.         | Central Bank Bldg., Memphis      |
| Hamilton, J. F.    | Pathological Institute, Memphis  |
| Hardin, B. F.      | Un. & Plant. Bank Bldg., Memphis |
| Harris, W. R.      | Exchange Bldg., Memphis          |
| Haskell, L. W.     | Bank of Com. Bldg., Memphis      |
| Henderson, R. D.   | Bank of Com. Bldg., Memphis      |
| Hendricks, M. D.   | Exchange Bldg., Memphis          |
| Henning, D. M.     | Goodwyn Institute, Memphis       |
| Hennessey, R. A.   | Exchange Bldg., Memphis          |
| Henry, J. P.       | 20 S. Dunlap St., Memphis        |
| Herring, J. H.     | Baptist Hospital, Memphis        |
| Hill, J. F.        | Exchange Bldg., Memphis          |
| Hill, H. G.        | 859 Madison Ave., Memphis        |
| Hobson, J. J.      | Exchange Bldg., Memphis          |
| Holder, E. M.      | Bank of Com. Bldg., Memphis      |
| Howard, W. I.      | Exchange Bldg., Memphis          |
| Huddleston, J. J.  | Un. & Plant. Bk. Bldg., Memphis  |
| Hudson, A. G.      | Highland Ave., Memphis           |
| Hughes, J. A.      | Exchange Bldg., Memphis          |
| Hundling, H. W.    | 20 S. Dunlap St., Memphis        |
| Ireland, P. M.     | Bank of Com. Bldg., Memphis      |
| Jacobs, A. J.      | Exchange Bldg., Memphis          |
| Jacobson, H. B.    | Bank of Com. Bldg., Memphis      |
| James, D. H.       | Exchange Bldg., Memphis          |
| James, J. A.       | Exchange Bldg., Memphis          |
| Jelks, J. L.       | Un. & Plant. Bk. Bldg., Memphis  |
| Johnson, Joseph    | Shrine Bldg., Memphis            |
| Johnson, E. J.     | Exchange Bldg., Memphis          |
| Johnson, L. C.     | Lucy, Tenn.                      |
| Johnson, S. E.     | Exchange Bldg., Memphis          |
| Jones, Geo. P.     | 227 McLemore St., Memphis        |
| Kane, Elizabeth    | 933 Peabody Ave., Memphis        |
| Kaplin, Max        | Exchange Bldg., Memphis          |
| Karsch, J. H.      | Un. & Plant. Bk. Bldg., Memphis  |
| Kenton, F. E.      | Goodwyn Institute, Memphis       |
| King, C. C.        | 20 S. Dunlap St., Memphis        |
| King, V. D.        | Un. & Plant. Bk. Bldg., Memphis  |
| Krauss, Wm.        | Pathological Institute, Memphis  |
| Laten, O. M.       | Exchange Bldg., Memphis          |
| Lawrence, W. S.    | Bank of Commerce, Memphis        |
| Leake, N. E.       | Baptist Hospital, Memphis        |
| Leatherwood, T. F. | Exchange Bldg., Memphis          |
| Leroy, Louis       | 293 S. 3rd St., Memphis          |
| Levy, G. J.        | Central Bank Bldg., Memphis      |
| Levy, Louis        | Bank of Commerce Bldg., Memphis  |
| Lewis, A. C.       | Bank of Commerce Bldg., Memphis  |
| Linder, F. E.      | 1293 Madison Ave., Memphis       |
| Lipscomb, E. J.    | Exchange Bldg., Memphis          |
| Livermore, G. R.   | Exchange Bldg., Memphis          |
| Malone, Battle     | Goodwyn Institute, Memphis       |
| Malone, F. M.      | Capleville, Tenn.                |
| Mann, Robt.        | Central Bank Bldg., Memphis      |
| Marshall, C. H.    | Exchange Bldg., Memphis          |
| Mason, C. R.       | 36 Mallory Ave., Memphis         |
| Mason, J. W.       | 606 Chelsea Ave., Memphis        |
| Mason, Robt. E.    | Bank of Com. Bldg., Memphis      |
| Maury, J. M.       | Bank of Com. Bldg., Memphis      |
| McCormick, R. B.   | 1074 Madison Ave., Memphis       |
| McCown, O. S.      | Bank of Com. Bldg., Memphis      |
| McFavid, R. S.     | 141 Mill St., Memphis            |
| McElroy, J. B.     | Central Bank Bldg., Memphis      |
| McGhee, J. L.      | Central Bank Bldg., Memphis      |
| McKinney, Richmond | Bank of Com., Memphis            |
| McIntosh, J. A.    | Pathological Institute, Memphis  |
| McMahan, A. R.     | Exchange Bldg., Memphis          |
| McNulty, J. B.     | Exchange Bldg., Memphis          |
| McQuiston, J. A.   | Brunswick, Tenn.                 |
| Meeker, Sidney     | Bank of Com. Bldg., Memphis      |
| Meyer, A. H.       | Goodwyn Institute, Memphis       |
| Meyer, L. L.       | Bank of Com. Bldg., Memphis      |
| Minor, J. L.       | Bank of Com. Bldg., Memphis      |
| Mitchell, E. C.    | 1074 Madison Ave., Memphis       |
| Mitchell, E. D.    | Bank of Com. Bldg., Memphis      |
| Mitchell, F. T.    | Exchange Bldg., Memphis          |
| Mitchell, J. I.    | 869 Madison Ave., Memphis        |
| Mitchell, W. W.    | 1456 Peabody, Memphis            |
| Moore, Alfred      | Randolph Bldg., Memphis          |
| Moore, Moore       | Bank of Com. Bldg., Memphis      |
| Moore, T. D.       | 20 S. Dunlap St., Memphis        |
| Moore, W. P.       | Goodwyn Institute, Memphis       |
| Montgomery, T. R.  | Lee Bldg., Memphis               |
| Morgan, C. H.      | Central Bank Bldg., Memphis      |
| Morgan, J. L.      | Central Bank Bldg., Memphis      |
| Moss, J. T.        | 7 Lee Bldg., Memphis             |
| Musgrave, G. W.    | McLemore & Rayburn Sts., Memphis |
| Owen, J. P.        | Gage Ave., Memphis               |
| Parrott, S. W.     | Cordova, Tenn.                   |
| Paullus, Geo. E.   | Bank of Com. Bldg., Memphis      |
| Pearce, L. P.      | Collierville, Tenn.              |
| Pearce, R. S.      | McCall Bldg., Memphis            |
| Peete, E. M.       | 1298 Madison Ave., Memphis       |
| Perkins, B. A.     | Bank of Com. Bldg., Memphis      |
| Pistole, W. H.     | Exchange Bldg., Memphis          |
| Porter, A. R.      | Exchange Bldg., Memphis          |
| Pride, W. T.       | Bank of Com. Bldg., Memphis      |
| Price, J. A.       | Oakville Sanitarium, Memphis     |
| Pruitt, W. V.      | Central Bank Bldg., Memphis      |
| Qualls, H. W.      | Shrine Bldg., Memphis            |
| Quinn, A. G.       | Central Bank Bldg., Memphis      |
| Raines, E. A.      | 270 Hernando, Memphis            |
| Raines, H. R.      | Exchange Bldg., Memphis          |
| Ragsdale, J. W.    | Randolph Bldg., Memphis          |
| Ragsdale, W. E.    | Exchange Bldg., Memphis          |
| Rawls, G. P.       | Lucy, Tenn.                      |
| Reinberger, J. R.  | Exchange Bldg., Memphis          |
| Richards, Alma B.  | Lee Bldg., Memphis               |
| Rosamond, J. H. E. | 1074 Madison Ave., Memphis       |
| Rucker, S. T.      | Un. & Plant. Bk. Bldg., Memphis  |
| Rucks, W. L.       | 1074 Madison Ave., Memphis       |
| Rudisell, A. W.    | 1014 Patton, Memphis             |
| Rudner, H. G.      | 1098 Madison Ave., Memphis       |
| Rutledge, Elese    | 229 Lemaster, Memphis            |
| Sanders, L. C.     | 20 S. Dunlap St., Memphis        |
| Sanders, R. L.     | 20 S. Dunlap St., Memphis        |
| Sanford, C. H.     | Exchange Bldg., Memphis          |
| Savage, G. H.      | Central Bank Bldg., Memphis      |
| Schmeiser, H. C.   | Pathological Institute, Memphis  |
| Schmittou, L. V.   | Exchange Bldg., Memphis          |
| Schreier, P. C.    | Shrine Bldg., Memphis            |
| Schultz, M. A.     | 17 W. Iowa Ave., Memphis         |
| Searight, M. M.    | Exchange Bldg., Memphis          |
| Seligstein, M. B.  | Lee Bldg., Memphis               |

Semmes, R. E.-----Bank of Com. Bldg., Memphis  
 Shea, J. J.-----Exchange Bldg., Memphis  
 Simpson, W. L.-----Exchange Bldg., Memphis  
 Sibley, S. J.-----Central Bank Bldg., Memphis  
 Smith, J. H.-----Central Bank Bldg., Memphis  
 Smith, O. E.-----1988 Madison Ave., Memphis  
 Smith, W. H.-----251 E. McLemore, Memphis  
 Smythe, F. D.-----Exchange Bldg., Memphis  
 Smythe, F. W.-----Exchange Bldg., Memphis  
 Somerville, W. G.-----Exchange Bldg., Memphis  
 Speed, J. S.-----869 Madison Ave., Memphis  
 Spingarn, M. G.-----Exchange Bldg., Memphis  
 Stanford, J. B.-----Shrine Bldg., Memphis  
 Stern, N. S.-----Central Bank Bldg., Memphis  
 Stinson, W. D.-----Bank of Com. Bldg., Memphis  
 Stone, J. B.-----219 Broad St., Memphis  
 Swink, W. T.-----Bank of Com. Bldg., Memphis  
 Symons, C. A.-----50 E. Norwood, Memphis  
 Taylor, Newman-----Bank of Com. Bldg., Memphis  
 Taylor, W. W.-----Exchange Bldg., Memphis  
 Tate, Murray-----1381 Madison Ave., Memphis  
 Terrill, S. D.-----Exchange Bldg., Memphis  
 Terrill, S. S.-----Bank of Com. Bldg., Memphis  
 Thompson, E. G.-----Goodwyn Institute, Memphis  
 Thomas, H. E.-----222 N. Main St., Memphis  
 Thorn, S. W.-----Un. & Plant. Bk. Bldg., Memphis  
 Toombs, E. W.-----1042 Madison Ave. Apt., Memphis  
 Townsend, H. R.-----Oakville Sanitarium, Memphis  
 Turley, H. K.-----Exchange Bldg., Memphis  
 Turner, B. F.-----Central Bank Bldg., Memphis  
 Turner, C. C.-----Exchange Bldg., Memphis  
 Vallery, J. A.-----Grand Central Sts., Memphis  
 Vaughn, J. A.-----Exchange Bldg., Memphis  
 Venn, J. H.-----Madison Ave. Bldg., Memphis  
 Wadley, S. L.-----1026 Forrest St., Memphis  
 Waddington, W. J.-----Bk. of Com. Bldg., Memphis  
 Walker, D. P.-----Exchange Bldg., Memphis  
 Wallace, W. R.-----Normal, Tenn.  
 Warde, Cecil-----141 Mill St., Memphis  
 Warr, O. S.-----20 S. Dunlap St., Memphis  
 Watkins, E. D.-----Exchange Bldg., Memphis  
 Watkins, H. C.-----Central Bank Bldg., Memphis  
 Watson, Fred C.-----Shrine Bldg., Memphis  
 Williams, A. B.-----159 Madison Ave., Memphis  
 Williamson, W. L.-----Central Bank Bldg., Memphis  
 Wood, P. H.-----Exchange Bldg., Memphis

**SMITH COUNTY.**

Beasley, J. J.-----Pleasant Shade  
 Beasley, I. H.-----Dixon Springs  
 Bridge, J. G.-----Gordonsville  
 Brownfield, F. W.-----St. Louis, Mo.  
 Chism, J. H.-----Carthage  
 Dalton, W. B.-----Gordonsville  
 Garrett, R. E.-----Dixon Springs  
 High, B. J.-----Elmwood  
 Key, R. E.-----Monoville  
 Wilson, T. S.-----Gordonsville

**SULLIVAN-CARTER-JOHNSON COUNTY.**

Booher, W. R.-----Bristol  
 Childress, R. T.-----Kingsport  
 Copenhaver, Nat H.-----Bristol  
 Cottrell, J. L.-----Elizabethtown  
 Delaney, J. A.-----Bristol, Va.  
 Fleenor, C. W.-----Holston Valley  
 Graves, F.-----Bluff City  
 Hacker, C. C.-----Elizabethtown  
 Hooks, Arthur-----Bristol  
 Hutchinson, J. C.-----Crandall  
 Hyder, H. P.-----Washington, D. C.  
 McCreary, A. B.-----Raleigh, N. C.  
 Peavler, G. M.-----Bristol  
 Peters, N. S.-----Bristol  
 Reynolds, S. E.-----Elizabethtown  
 Robinson, N. D.-----Carter  
 Robinson, J. B. D.-----Mountain City

Rhea, E. Bruce-----Shoun  
 Sproles, W. S.-----Bluff City  
 Snapp, L. B.-----Bristol  
 Staley, T. F.-----Bristol  
 Stout, P. D.-----Bristol  
 Swift, D. A.-----Butler  
 Tipton, E. W.-----Kingsport  
 Vance, W. K.-----Bristol  
 Vance, W. K. Jr.-----Bristol  
 Vaught, W. W.-----Shoun  
 Williams, P. S.-----Hampton  
 Woods, J. O.-----Elizabethtown  
 Yancey, T. B.-----Kingsport

**SUMNER COUNTY.**

Allen, W. F.-----Gallatin  
 Ames, J. L.-----Castalian Springs  
 Bate, Humphrey-----Castalian Springs  
 Buchanan, R. N.-----Hendersonville, R.F.D.  
 Carter, T. Y.-----Westmoreland  
 Donoho, C. H.-----Portland  
 Lackey, W. N.-----Gallatin  
 Moore, W. P.-----Portland  
 Oliver, J. M.-----Portland  
 Parker, J. R.-----Gallatin  
 Peden, E. F.-----Portland  
 Reese, Homer-----Gallatin  
 Roark, W. W.-----Bethpage  
 Robbins, C.D.-----Gallatin  
 Stephens, J. H.-----Hendersonville  
 Woodson, L. M.-----Gallatin  
 Wright, T. W.-----Bethpage

**TIPTON COUNTY.**

Currie, H. C.-----Burlison  
 Dickson, B. V.-----Covington  
 Gillespie, G. B.-----Covington  
 Hill, L.-----Covington  
 Kelley, N. W.-----Covington  
 McLister, W. A. L.-----Brighton  
 McLister, Waldo-----Brighton  
 Newman, N. R.-----Covington  
 Roby, A. J.-----Covington  
 Sale, H. W.-----Covington  
 Witherington, A. S.-----Munford  
 Witherington, J. B.-----Munford

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 Cass, H. M.-----Johnson City  
 Chipley, B. L.-----Nat. San., Johnson City  
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 Dulaney, R. W.-----Jonesboro  
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 Estes, Elmer-----Johnson City  
 Frost, Wm. Grady-----Elizabethtown  
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 Hankins, J. L.-----Johnson City  
 Hartsook, N. E.-----Johnson City  
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 Hyder, R. B.-----Johnson City  
 Jenson, Wm. C.-----Ntal. San., Johnson City  
 Jones, U. G.-----Ntal. San., Johnson City  
 Kennedy, W. T.-----Johnson City  
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 Kyker, C. H.-----Johnson City  
 Long, E. A.-----Johnson City  
 Matthews, J. W.-----Johnson City  
 McCollum, W. H.-----Jonesboro  
 McFadden, James T.-----Jonesboro  
 Miller, H. D.-----Johnson City  
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 Moss, J. G.-----Johnson City  
 Murray, R.-----St. Elmo, Ntal. San., Johnson City  
 Panhorst, H. M.-----Jonesboro

Peyton, R. L.-----Ntal. San., Johnson City  
 Randall, J. P.-----Johnson City  
 Schroder, H. J.-----Natl. San., Johnson City  
 Sells, George-----Johnson City  
 Senteff, R. L. H.-----Ntal. San., Johnson City  
 Wallace, J. M.-----Ntal. San., Johnson City  
 Wallace, J. W.-----Johnson City  
 West, E. T.-----Johnson City  
 Woodruff, J. B.-----New Orleans, La.

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 McGuire, H. L.-----Morison  
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 Jeter, J. E.-----Gelason  
 Little, R. M.-----Martin  
 McBride, W. W.-----Gleason  
 Parish, B. B.-----National Sanitorium, Tenn.  
 Sebastian, C. M.-----Martin  
 Stevens, H. B.-----Dresden  
 Stewart, J. M.-----Martin  
 Smythe, A. P.-----Martin  
 Taylor, J. E.-----Dresden, R.F.D.  
 Thomas, G. C.-----Greenfield  
 Wingo, T. B.-----Martin

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 Clark, E. B.-----Eastland  
 Gaines, S. E.-----Sparta  
 Hutton, Vernon-----Ravenscroft  
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 Campbell, M. B.-----Brush Creek, R. F. D.  
 Cotton, L. D.-----Alexander  
 Davis, J. L.-----Watertown  
 Doak, J. R.-----Watertown  
 Dotson, Walter S.-----Lebanon  
 Graves, J. W.-----Martha, R.F.D.  
 Gaston, Bernard-----Lebanon  
 Huffman, C. W.-----Lebanon  
 McFarland, J. J.-----Lebanon  
 Martin, W. D.-----Donalson  
 Puryear, J. R.-----Lebanon  
 Rhea, B. S.-----Lebanon  
 Shannon, F. E.-----Lebanon, R.F.D.  
 Spiceland, J. L.-----Lucedale, Miss.  
 Wells, M. H.-----Watertown

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 German, Dan-----Franklin  
 Graham, W. W.-----College Grove, R.F.D.  
 Graves, L. M.-----Franklin  
 Greer, J. W.-----Franklin, R.F.D.  
 Howlett, K. S.-----Franklin  
 Nolen, B. T.-----Franklin  
 Paschaell, G. C.-----Arrington  
 Seward, J. A.-----Franklin  
 Walker, J. O.-----Franklin

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## DUPLICATION OF THE KIDNEY PELVIS AND URETER WITH INFECTION\*

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(From the Department of Urology, University of Tennessee, Medical Department)

WITH the present day facilities for examination in urological cases anomalies are being found with surprising frequency. Though of no interest clinically, diseases in such cases produce symptom complexes which are indeed confusing to the diagnostician. Since it is known that such anomalies are particularly susceptible to disease it would seem logical that a fair percentage present themselves for examination. Mertz states that thirty per cent of his collected cases were the site of disease, while Braash and Scholl found pathology in 37.5 per cent of their cases. Obviously we are finding but a small percentage of these cases.

### INCIDENCE

That kidney and ureter anomalies are not infrequent is evident from autopsy and dissection findings. The incidence, however, varies considerably with the nature and source of the statistics. Brewer in 150 autopsies found nine cases of partial or complete duplication of the kidney, pelvis and ureter. Poirier found six cases in 300 autopsies. Pawloff in 200 renal operations found six cases. Culver, quoted by Mertz, found in the cystoscopic examina-

tion of 600 patients one complete bilateral, five complete unilateral and two cases of incomplete unilateral duplication. Herbert C. Clark in 2,823 autopsies found in twenty-one anomalies of the kidney and ureter, eight cases with partial or complete duplication of the kidney pelvis and ureter.

### ANATOMY

Variations in the division of the renal blastoma gives a variety of anomalies ranging from a partial duplication of the kidney pelvis to a complete duplication of the ureters. The size of the double kidney varies in direct proportion to the distance between the pelvis. Braash and Scholl state that though there is a definite external division of the two segments that microscopic examination of the intervening tissues showed no apparent division of the cellular structure of the two segments. In the two cases here reported the lower pelvis was the site of the pathology. The first case was a pyelitis; the second an infected hydronephrosis with an extensive pyelonephritis involving both segments of the double kidney. There was no crossing of the ureters in case No. 1 and a wide separation of the kidney pelves was found. These facts are of importance in the surgical treatment since an intimate relationship

\*Read before the Tri-State Medical Society, Memphis, November 21, 22, 1923.

between the ureters and kidney pelvis make heminephrectomy impossible as in the case reported by Schoonover. Mertz suggests that supernumerary ureters with ectopic orifices opening into the urethra may explain some of our obscure cases of incontinence and enuresis.

#### SYMPTOMATOLOGY

The symptoms were those characterizing an urinary infection—viz., frequency, dysuria, tenesmus, chills, fever and pyuria. In case one, previous cystoscopic and ureteral catheterizations had failed to reveal infected urine from either kidney, though catheterized bladder specimens showed an abundance of pus.



Fig. 1 of Case No. 1—Retouched pyelogram showing double kidney pelvis and ureters.

#### DIAGNOSIS

In complete duplications when the ureters are adjacent to the normal position on the floor of the bladder they may be readily seen in the routine cystoscopy. Indigocarmine may be given to color the urine when the condition is suspected. In complete duplication will usually be discovered by routine pyelo-ureterography. Braash and Scholl state that a duplication is suggested

when a high lying small pelvis is found or when the ureter leading to the normal pelvis is smaller than the combined ureter.

#### CASE REPORTS

Case No. 1. Mrs. F. W. R., aged 46 years, complained of a "pressure pain" over the bladder radiating into the right loin which has occurred periodically for the past three years. Each attack began with chills, fever, nausea and lassitude followed by frequent micturition and tenesmus. On one occasion she passed blood. Twelve



Fig. 2—Photograph of specimen removed at autopsy showing double kidney and ureters.

years ago the patient was operated for goiter; three years ago her appendix was removed and a year later hysterectomy was done.

Physical examination revealed some tenderness over the bladder and right kidney. Blood examination was normal. The blood

pressure was 124/82. X-rays of the kidney, ureters and bladder were negative. A complete dental ray was also negative. Analysis of a catheterized bladder specimen showed a turbid urine. Sediment examination showed an abundance of pus and colon bacilli, but no tubercle bacilli or other bacteria. Cystoscopic examination revealed a diffuse subacute cystitis. The ureteral meati were normally placed at either end of the interureteric ridge and appeared to be spurting normal swirls of urine. A third ureteral orifice was found a half cen-

and colon bacilli on stain and culture. A differential functional with intravenous phthalein showed a twelve per cent return from the left side, eight per cent from the normal ureter, and three per cent from the third ureter and kidney pelvis.

The infected pelvis was drained by an indwelling Garceau ureteral catheter for forty-eight hours and lavaged with one per cent silver nitrate solution. Forced fluids, urinary antiseptics, elimination and subsequent ureteral catheterization and pelvic lavage was followed by a complete disappearance of her symptoms with no recurrence in a year. Since Mertz states that such anomalies are often bilateral, a subsequent effort was made to find a partial duplication on the opposite side by fractional ureterography. These procedures, however, failed to show any tendency toward a duplication on the left side.

Case 2. G. L., a negro man, aged 47, was admitted to the Memphis General Hospital August 2, 1923, complaining of dysuria, pain in the back and over the bladder. Great effort was necessary to expel small amounts of urine. Three weeks ago the patient noticed a small swelling on the under surface of penis at penoscrotal junction which had become gradually larger. A history of repeated gonorrheal infections was elicited.

Physical examination revealed a well-nourished negro man extremely septic and dull mentally and with a temperature of 102 F. A tense swelling was found at the penoscrotal junction of the urethra. Fluctuation was elicited and infected urine expressed through the urethra by compression. Bouges revealed extensive scarring of the urethra. A filiform bouge was passed and a grooved sound guided into the pouch or false diverticulum extending from the floor of the urethra. Rectal examination revealed a moderately enlarged prostate of boggy consistency. The seminal vesicles were palpable but compressible. Urinalysis showed a moderate trace of albumen and an abundance of pus. Blood analysis: white cells nine thousand, red



Fig. 3—Photograph of autopsy specimen showing kidney split to remove double pelvis.

trometer to the right and slightly below the right ureter. The three ureters were catheterized and specimens obtained. The urine from the normally placed ureters was negative. The urine from the third ureter showed sixty cells to the high power field

blood cells four million, five hundred thousand. Urea nitrogen 40.5 mg. per hundred c.c. of blood; creatinine 3.6 mg. per hundred c.c. of blood.

In the presence of the profound sepsis and urinary obstruction hypodermoclysis was given and an external urethrotomy done under gas anesthesia. The patient failed to rally or respond to stimulation and died August 9, 1923.

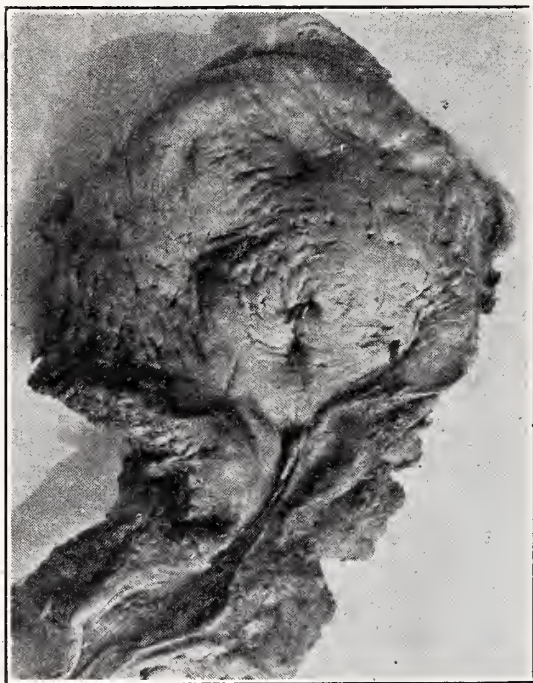


Fig. 4—Photograph of bladder removed at autopsy to show ureteral openings, marked by wooden applicators.

An autopsy was performed and an extensive bilateral pyelonephritis with a duplication of the right kidney pelvis and ure-

ter found. The lower pelvis was markedly distended; the major calyces broadened and the renal parenchyma thinned. Evidence of infection was found throughout the urinary tract.

#### SUMMARY

Of the 362 cases reviewed by Harpster, Brown and Delcher, 144 reported by Braash and Scholl and one added by O'Neil for a total of 520, since eight cases previously reported by Braash were included in Harpster, Brown and Delcher's review of the unilateral duplications 171 or 44.7 per cent were complete, while 34.8 per cent were partial or incomplete. This varies markedly with Braash and Scholl's report, since in their series 68.7 per cent were incomplete duplications. This would speak for a more general routine use of the pyeloureterogram. Bilateral duplications were found in 16.4 per cent of the cases, though Mertz contends that the character of the pelvic outline is similar and often expresses a tendency to duplication on the opposite side. These cases and similar cases reported would seem to justify a more careful search for such anomalies.

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## INDICATIONS FOR TREATMENT OF FIBROID TUMORS OF THE UTERUS\*

W. C. DIXON, M.D., F.A.C.S., NASHVILLE

**F**IBROID tumors of the uterus are said to be the most frequent of all tumors, their occurrence being estimated at twenty per cent of all women over thirty-five years of age, and at a higher figure as the age considered advances, reaching fifty per cent in women fifty years of age.

They are responsible for considerable morbidity and either directly cause, or indirectly contribute to, a fair mortality.

A patient who has such a tumor presents a problem with reference to the best method of treatment that demands careful consideration by her medical adviser.

Generally speaking, three plans are available: First, letting the tumor alone; second, the use of radiotherapy; third, surgery.

Many factors must be considered in arriving at a decision, such as whether or not the tumor is producing symptoms, and the nature of the symptoms, if present; the age of the patient; the size of the tumor and the rate of its growth; whether or not it is associated with other pelvic pathology; whether or not the woman has other organic disease of a serious nature; whether or not the tumor is undergoing degenerative changes.

It is evident that a careful study of the patient and a thorough examination are necessary before arriving at a conclusion. Even then it is very difficult at times to be sure as to degenerative changes in the tumor, and as to the presence of associated pelvic pathology, both of which are of the greatest importance in deciding between radiotherapy and surgery as the method of treatment. Small fibroids that produce no symptoms require no treatment. Such

cases should be kept under observation and examined at six-month intervals to note any change in the growth.

Because fibroids frequently decrease in size after the menopause, women with tumors which are producing symptoms are sometimes advised to await this time in the hope that their tumors will disappear.

This decrease in size is due to the increase in the fibrous tissue at the expense of the muscular tissue, and few of them entirely disappear. It is merely the change from one type of tumor to another, with some decrease in size, due to the increased proportion of fibrous tissue.

The presence of a tumor tends to delay the menopause, and it is at this time that degenerative changes are most prone to occur. Carcinoma of the body of the uterus, to which fibroids predispose, has its highest incidence at this time, consequently this advice should only be given after very careful consideration.

As a matter of fact, symptom-producing tumors at the menopause call for active treatment more urgently than they do at an earlier age.

Fibroid tumors complicating pregnancy present special problems.

Not the least of these is the question of diagnosis. A tumor which is increasing rapidly in size should always make us consider the possibility of the increase being due to pregnancy. If there is reasonable doubt on this point, unless there are urgent symptoms, the case had best be kept under observation for a time until the question can be settled.

Tumors on the body of the uterus rarely interfere with labor by blocking the outlet. Cervical or intraligamentous growths may cause mechanical interference, espe-

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

cially if the tumor springs from the posterior cervical wall, and is wedged in the pelvis. Labor may be slow, due to early rupture of the membranes, slow dilatation of the cervix or faulty presentation.

Degeneration or infection of the tumor, especially red degeneration, may demand surgical interference during pregnancy or the puerperium.

The mere presence of a tumor, however, is not sufficient justification for interference.

That many needless hysterectomies have been done on this basis is shown by some of the literature of 10 or 15 years ago. Carstens collected a series of 516 cases. In these, hysterectomy was done prior to fetal viability in 46.4% of cases. Fortunately these figures do not represent present-day practice in any sense.

In contrast to this Lobenstein has reported 100 cases, 85 coming to term and 75% of these having a spontaneous labor, an additional number being delivered with forceps to run this up to 87%.

Myomectomy has been employed in many of these cases, some of them even withstanding this procedure and going to term. One cannot escape the conviction that many of these women would have delivered themselves spontaneously if left alone.

Myomectomy is especially difficult to do in the type of case where mechanical interference might take place, namely, the growth low down on the posterior wall. It is likely to be followed by adhesions, and there is some danger of the scar giving way during labor. It should rarely be necessary and then on very definite indications.

Cases in which it is proven by the test of labor that delivery is impossible may be handled by a Porro-Cesarian Section.

The use of radium and x-ray in the treatment of these tumors is a comparatively new thing. Like all new things in medicine, it has been enthusiastically championed by some who have perhaps done the method harm by extending the domain of its usefulness too far. On the other hand,

some surgeons have been highly critical of this treatment, and perhaps have not given to it the credit which it is due.

That radiotherapy has a powerful effect on these tumors, and on the symptoms of hemorrhage in particular, is no doubt true; that this effect is not always conservative, and not always without danger is also true, and while it has its limitations, it should be accepted as a valuable method within these limitations.

There is some argument as to how x-ray and radium produce their effect in these cases. It is admitted, however, that they both have a powerful effect on the ovaries. Consequently, during the child-bearing period they are contraindicated if operative treatment offers any hope of preserving this function.

Myomectomy may at times be done on a surprisingly large tumor, and even if child bearing is not possible the function of menstruation may be preserved. This is well worth while, as it may have a tremendous influence on the woman's mental well-being and her outlook on life.

Another reason for exercising great care in the use of radiotherapy in young women or women in the child-bearing age has been presented by Bailey and Bragg in an article on the "Effects of Irradiation on Fetal Development."\*

They deplore the many loose statements that have been made with reference to the cure of many gynecological ills, without any ill effects following, by irradiation. They review the experimental work on this subject which shows that sufficient irradiation before fertilization occurs produces, to quote from them, "disturbed abnormal arrested development, resulting in the formation of monsters conforming more or less to a general type with pronounced disturbances in the development of the central nervous system. A marked tendency to a progressive loss of fertility. A specific modification of the hereditary mechanism and the production of inherited defects in the young, especially in the eyes."

\*American Journal of Obstetrics and Gynecology, May, 1923.

"Irradiation during pregnancy produces disturbed abnormal development, with death of the embryos, absorption or abortion, stunting in growth, cataract, sterility, lesions of the central nervous system and blood vascular disturbances in the embryos."

They also take up the clinical evidence on this subject, and review the cases reported in the literature where pregnancy occurred after irradiation, or where irradiation was given during pregnancy. The number of such cases is comparatively small.

Their conclusions are as follows:

"1. It is questionable whether radium or x-ray irradiation should be used to destroy the ripe follicle, leaving the immature ones, injured, but capable of development. This statement is made entirely on the strength of the experimental work on the lower animals, and we do not feel satisfied in considering any of the available clinical records as adding conclusive evidence in this regard. "In the treatment of menorrhagia in the child-bearing period, we believe that complete sterility is preferable to the possibility of a damaged plasm."

"2. Irradiation of the ovum during early pregnancy should never be permitted. Radiation in late pregnancy, while it may not produce gross abnormalities at birth, may hinder the growth and development of the child in later life."

Such statements coming from Dr. Bailey should make us very careful of the use of irradiation in the treatment of fibroids during the child-bearing period and incidentally in the treatment of hemorrhage in young girls. Such cases should be followed to see the end results on pregnancy, should it occur.

Pelvic infection is a contraindication to radiotherapy, as it may light up a latent infection with distressing consequences, this being particularly true in the case of radium.

The diagnosis of pelvic infection in the presence of a tumor is at times very difficult, and even in cases where gonorrhoeal

and puerpeal infection can be ruled out we must bear in mind that organisms may reach the tumor by way of the blood stream and set up an inflammatory process in the pelvis.

Tumors larger than a three and one-half months' pregnancy are best treated by surgery. Submucous and subserous tumors are also best treated this way.

Given a woman forty years of age, with an interstitial fibroid, without associated pelvic pathology, who has a tumor no larger than a three and one-half months' pregnancy, we have the ideal type of case for treatment by radiotherapy. This group comprises probably not over fifteen per cent of cases producing symptoms.

It has a field of usefulness also in women who have bled excessively and in some cases associated with serious organic lesions precluding surgery.

Cases treated by x-ray or radium should be followed for a long time, as it is only by observing a larger number of cases treated by this method at the end of a ten-year period that we can know the ultimate results.

Surgery still remains the chief dependence in the treatment of this common condition.

Cervical tumors, large tumors, cases complicated by pelvic infection, degeneration, tumors causing pressure symptoms, are all best treated by surgery.

In young women, the hope of doing a myomectomy, with the preservation of the function, would bring into this class tumors smaller than a three months' pregnancy.

Supravaginal hysterectomy is an operation so perfected that it gives a low mortality in properly selected cases.

Complete hysterectomy is more ideal in that it removes the cervix, thus reducing the risk from cancer. However, the added mortality would probably more than offset this advantage, if adopted as a routine. Where the cervix is badly lacerated or is suspicious of malignancy, a complete hysterectomy should be made.

The mortality following hysterectomy or myomectomy for fibroids ranges between two and five per cent. The higher figure represents late, complicated cases, such as are seen among negroes in our general hospitals.

These cases, if they sought relief earlier,

could be offered a lower mortality and better end results. Surgery and radiotherapy each has a field of usefulness in the treatment of these tumors. Each has certain dangers which we should recognize and consider before advising our patients as to the method of treatment to be employed.

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## REPORT OF A CASE OF RABIES\*

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R. C. KIMBROUGH, M.D., MADISONVILLE, TENN.

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J. B., male, aged 40, weight 202 pounds, muscular and no surplus fat.

He had syphilis three years ago and treated himself with protiodides until the sore throat disappeared. Four months ago he was thrown from a moving car, striking his head a severe blow. He had measles two months ago.

He had been a heavy drinker all his life and often drank to excess, bootlegging being his "profession." His life was one of exposure, irregular habits, often idleness and any kind and amount of food procurable, often of inferior quality and preparation. With all this he had been a very healthy man.

Two months before the present illness he was bitten by a pup which he described as having become irritable from being teased by the children, and as it was worthless, he had killed it. It snapped at every one it met during its illness and was seen biting its mother's ears just before it was killed. It never had any symptoms of paralysis. The mother died six weeks later. The family thought she had been poisoned, as she would not eat and kept her mouth open. She did not attempt to walk. Her jaw and legs may have been paralyzed. The patient was bitten on the naked left hand at the base of the thumb, and he described it as deep enough to draw the blood but not lacerating.

### PRESENT ILLNESS

April 18, 1924, he began having pains in the left wrist and shoulder. He was nervous, but slept fairly well that night. April 19, he was more nervous, but with his phlegmatic character it was not very noticeable. The pain was worse, and he could not drink from a glass, but could from a bottle. There was a number of dogs reported "mad" at this time, and he decided that he had rabies. There was no redness about the bite and none developed later. April 20, the pain in the shoulder was severe, but was less in the wrist. The hydrophobia was present as before and the nervousness decided. He was given a brisk cathartic and aspirin.

April 21, the pain was better, but the patient was more irritable. His mind, however, was clear. He was given seven and one-half grains of potassium bromide every four hours. This gave some relief. He did not object to the disagreeable taste of the bromide, not even noticing it.

April 23, he was very irritable and restless, and there were delusions and hallucinations as, for instance, seeing worms crawling over his person and bed. He remembered the hallucinations, but not the contemporaneous actual happenings, although he knew all his friends and what was being said and done. He resembled very much an intoxicated person in his lack

of muscular co-ordination and in his manner of speech. He was so irritable that it was hard to test his reflexes, but the knee jerk appeared diminished and the pupils reacted quickly. He could not drink except with a quill, but then there was no spasm of the muscles of deglutition. This condition was continuous with no periodic remissions. We had hesitated to make a diagnosis, as the case had progressed so slowly, but now he was so irritable that we decided that it was unquestionably rabies and thought it best to give him relief regardless of the depressing effect of the medicine. He had not slept since April 20. He was given two hundred and forty grains each of chloral and bromide in the following twenty-four hours with resulting disappearance of the hydrophobia, and he became stupid but had no continuous period of sleep.

April 24, he was better and ate and drank well. He was rational, but was in a state of slight intoxication, becoming stupid when left quiet, but was easily aroused and talked excitedly and walked like a drunken man. He would often hold his throat and shudder when drinking. He was so much better that a consultant did not think he had rabies.

April 26, he had had ninety grains each of chloral and bromide in the preceding twenty-four hours, but was more nervous and had some delirium and hallucinations. There was a slight weakness of the left arm. His bowels moved with difficulty and his tongue was coated. He appeared very sick and vomited his medicine.

April 26, there was complete motor and sensory paralysis of the left arm. He could drink from a glass, but clutched his throat with shudders and grimaces. The saliva was increased enough to cause promiscuous

expectoration, but there was no dribbling, no chewing and no froth. The left pupil appeared larger, but as the pupils reacted very actively to light it was probably from different degrees of stimulation. He was nauseated and vomited occasionally.

April 27, he had had eight grains of phenobarital in the preceding twenty-four hours and was resting very comfortably. He was much weaker and remained in bed. The hydrophobia had returned but disappeared later in the day. There was slight delirium and hallucinations. The skin was sensitive, particularly on the soles of the feet, so that a slight stroke to elicit reflexes caused considerable pain. He was nauseated and vomited occasionally.

April 28, at six a.m., he had had three grains of luminal in the preceding twenty-four hours. He was gradually growing weaker and movements of his limbs were limited and clumsy. He had been able to swallow liquids until this hour. He could not speak distinctly, but when his name was called he would look at the speaker and attempt to answer. There was little response from pricking the skin, but stroking the soles caused him to move his feet and right arm and this appeared to be very painful to him.

He died at seven a. m., April 28.

He had been sick ten days. He never had convulsions and no paralysis except the left arm. The urine was scanty and high colored; sp. gr. 1.025, with no albumin and no sugar. The brain was removed and Negri bodies reported as found by Dr. Wm. Litterer of Nashville.

It will be noticed that the duration was longer than usual; there was no remissions, no convulsions, and the irritability was controlled with ordinary sedatives in large doses.

## TREATMENT OF ACUTE MECHANICAL INTESTINAL OBSTRUCTION\*

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FRANK WARD SMYTHE, B.S., M.D., MEMPHIS

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**K**NOWING that acute mechanical intestinal obstruction is a surgical condition, and always bearing in mind that the earlier the operation the better the prognosis, there are some points pertaining to its relief which, if carefully considered, would do much toward lowering its frightfully high mortality.

The treatment consists of three phases—the pre-operative, the operative, and the post-operative.

#### PRE-OPERATIVE

As acute mechanical obstruction is an acute surgical abdomen, all cathartics are strictly contraindicated.

Morphin and other analgesics should not be given until consent for operation has been obtained. Not only because it can in no way relieve the obstruction, but also because when it eases the patient it may cause further procrastination and thus hourly decrease his chance for recovery. After consent for operation has been obtained morphin should be administered in sufficient quantity to keep the patient comparatively comfortable, for by its use peristalsis is somewhat checked. When this occurs the intestines are not subjected to so much trauma, the toxins, under less pressure, are not so readily absorbed, and the pain is decreased; therefore the exhaustion is diminished.

The body heat must be conserved, for from its loss resistance is lowered.

These cases rapidly become dehydrated. This must be overcome by giving fluids under the skin or in the vein.

If the general condition is not so good and a suitable donor is available, blood transfusion should be performed.

Gastric lavage is indicated in all cases.

This empties the stomach of whatever intestinal contents are present, thereby lessening the risk of a toxic dilatation and of regurgitated substances getting into the lungs and causing pulmonary complications.

#### OPERATIVE

The type of anesthesia is an important consideration. A method which will give the surgeon sufficient relaxation and at the same time tax the patient as little as possible, is desired. It is well to remember that if the pre-operative morphin has been given in two or three c.c. of the twenty-per cent magnesium sulphate solution, that, regardless of the anesthetic chosen, less of the latter will be required.

Both spinal and splanchnic anesthesia will give sufficient relaxation, but their tendency to lower the blood pressure and their comparatively high mortality prohibit their use in these cases.

Local anesthesia along the lines of incisions allows the abdominal cavity to be opened easily and painlessly but does not give enough relaxation for necessary exploration, and so prevents many justifiable procedures.

Of the inhalation anesthetics, there are two—ethylene and acetylene—with which the writer has had no personal experience, nor has his available literature mentioned their use in this condition.

Chloroform is too dangerous for use as an anesthetic of election.

Ether affords sufficient relaxation for any operation. However, since ether is followed by a fall in the blood pressure, nausea, vomiting, straining, and a period of depression, lasting from one to several hours, it is not the safest nor the most satisfactory anesthetic.

The method of choice is nitrous-oxid and

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\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

oxygen analgesia with local anesthesia along the lines of incision. Such a method allows ample relaxation for whatever surgery is indicated, causes no apparent change in the blood pressure, is followed by very little nausea, practically no vomiting or straining, and no post-operative period of depression.

After opening the abdomen the operative treatment depends upon the findings, which may be conveniently classed into three groups.

The first group includes those cases in which the cause of the obstruction can be readily detected, easily reached, and does not require resection. If such an obstruction has existed for not more than twenty-four hours removal of its cause is all that is necessary. If the obstruction has existed for more than twenty-four hours, even though the color and blood supply of the obstructed part is apparently normal, there is strong likelihood that its nerve supply has been impaired. When such occurs merely relieving the cause would not save the majority of these patients. Most of them would die from a paralytic ileus. So, to protect them, in addition to removing the cause an enterostomy should be made. This simple operation holds a most important place in the treatment of acute mechanical obstruction. It allows the escape of toxic substances and so keeps them from passing on to the dry bowel below the obstruction where they would be readily absorbed. It allows the operator to manipulate the viscera with a minimum amount of trauma and it affords drainage, the primary object of the operation.

The second group consists of those in which the cause of the obstruction cannot be found, or, if found, cannot be safely handled on account of the great amount of pathology or the poor general condition of the patient. These cases almost always receive too much surgery. Enterostomy alone is what they need to tide them over the crisis. It gives all the immediate benefits of a more extensive operation and none

of its harms. At a later date, when the patient has passed his immediate danger, and when his strength and general condition have sufficiently improved, the cause of the obstruction can be relieved.

The third group is made up of those cases in which resection is imperative.

Here the two stage operation is followed by the highest per cent of recoveries.

After the resection has been made, the best plan is to bring the ends of the remaining intestine to the outside abdominal wall, close the incision, and do no further operating at this time. For after drainage has been obtained by means of the resection, no further surgery can increase this drainage, but any further surgery can, and does, increase the operative mortality by subjecting the patient to additional shock. Later, when the patient's general condition is satisfactory, the anastomosis can be safely made.

#### POST-OPERATIVE

The stomach should be washed before the patient leaves the operating table, and thereafter as often as indicated. Such indications would include vomiting, spitting up, or gastric dilation.

Sufficient morphin should be given to keep the patient quiet and comfortable.

The body heat must be maintained.

The fluid balance must be upheld by means of the rectal drip, hypodermoclysis, or infusion. Whenever indicated a blood transfusion should be done.

Cathartics are not necessary, for when drainage has been provided, and the tone of the intestines has sufficiently recovered, the bowel will empty.

If the lumen of the intestine has been opened it is advisable to institute a modified peritonitis treatment as a prophylactic.

#### CONCLUSION

1. In acute mechanical obstruction, rational pre-operative and post-operative treatment are essential.

2. The operation should be one which will assure drainage; no more. Too much surgery is almost always fatal.

## ACUTE INTESTINAL OBSTRUCTION

LYLE B. WEST, M.D., CHATTANOOGA

THE literature of acute intestinal obstruction, especially from the experimental standpoint, has increased recently to enormous proportions. The mortality, however, remains appallingly high, approximately fifty per cent; the highest mortality of any so-called curable abdominal condition.

It is not the scope of this paper to discuss the many types and causes of obstruction, nor the clinical symptoms and diagnosis of the condition. I shall present merely a review of the literature and attempt to formulate a rational surgical relief for the critical cases.

It is generally agreed that death in acute intestinal obstruction is due to a toxemia resulting from absorption of toxic products, probably of a protein nature, formed by or in the intestine proximal to the obstruction. Further, it has been repeatedly observed that the higher the obstruction the more rapid and virulent is the toxemia and death.

Ellis (1) has given us perhaps the most complete recent review of the literature as to the nature of the toxin. Competent research workers differ concerning the nature and formation of the toxin, so it is no wonder that the clinical surgeon finds it difficult to orient himself in the mass of more or less contradictory biological and chemical findings.

Whipple and associates (2) find that nonprotein nitrogen blood content is greatly increased in intestinal obstruction. This has been repeatedly and constantly observed, and they say that increase is due to excessive breakdown of tissue protein caused by the absorption of a proteose. Ingvaldsen and associates (3) say that this nonprotein nitrogen increase is due almost entirely to an increase of urea. If there were

an associated nephritis or nephrosis with the toxemia this nonprotein nitrogen increase might be explained by a renal insufficiency, but this is not the case (4). The substance from an obstructed portion of intestine when injected into fasting dogs produces a profound toxemia, and nitrogen elimination by the urine increases one hundred per cent. Animals can be rendered immune to this proteose by progressively increasing periodic administration. (2) Some observers are unable to verify this phenomenon. When thus immunized, the toxic symptoms do not occur after injections, nor in violent form after artificial obstruction. This is illustrated by a partial chronic obstruction in which the animals are less susceptible than normal ones to the toxic proteose injections.

Sweet and his associates (5) have called attention to the clinical similarity between high intestinal obstruction and acute pancreatitis, and suggested that without the pancreatic juice the acute toxemia does not occur. However, Ingvaldsen (3) finds that the toxin from the obstructed loop of a depancreatized dog gives the typical toxemia when injected into a normal dog. He finds further that the toxin presents physical and chemical characteristics of a nucleo-protein, and that it does not contain histamine. Gerard (6) says that the toxin is probably a peptamine containing histamine. Whipple and associates (7) thought the toxin a heteroproteose. Nesbitt (8) believed that neurine was the fatal factor in the toxemia. Whipple (9) isolated a highly toxic proteose from obstructed loops and also found this toxic proteose in the exudates of the peritonitis around the obstruction.

Others say the toxin is due to the bacillus coli (10) and that it is found in the blood and peritoneum before there is any injury

to the intestinal wall. Buchbinder (11) has shown that the intestinal wall is not permeable to bacteria themselves until a severe degree of gangrene develops, or until injury is produced in the wall. The toxin perhaps is bacterial in origin, and there may be different toxins from the different bacteria (12); indeed, this theory of the toxemia would very happily account for the diversity of findings by the various investigators. Some hours after obstruction an intestinal loop literally swarms with bacteria, even when high in the jejunum or duodenum, so it is not just to entirely relieve them of responsibility as a causative factor in the toxemia. On the other hand, an obstructed loop of colon has a much greater bacterial content with less severe toxic symptoms; hence we cannot hold the bacteria entirely responsible—at most a *particeps criminis*. Dragstedt and his associates (13) found that death came just as soon in a washed loop of intestine containing few bacteria as in an unwashed loop with a huge bacterial culture. They conclude that death is due to the absorption of products of bacteria on necrotic tissue.

Costain (14) believes that the toxemia is due to the absorption of toxins from necrotic tissue, and further that this absorption is through the lymphatics to the thoracic duct rather than by the blood stream. Krehl (15) suggests that there is a less severe toxemia in colonic or low obstruction because most of the nourishment of the chyme has been extracted in its passage through the lower jejunum and ileum; therefore there is little substance to undergo putrefaction and decomposition when the food column reaches the colon. McKenna (16) cites the extensive network of glandular tubules of the glands of Lieberkuhn and Brunner in the duodenum as a possible explanation of the early fatality in high intestinal obstruction.

Werelius (17) shows that it is possible that cessation of peristalsis causes an inhibition of liver function and that death is the result of liver insufficiency. The amount of intestine rendered nonperistaltic

bears a direct relation to the duration of life after obstruction. There is also mention of the great danger of dilatation of the peristaltic intestine proximal to the obstruction, as first pointed out by Haidenhain.

The theory that death in ileus is due to some form of auto-intoxication was first advanced by Amussap in the year 1839 (18). Absorption in the beginning of ileus is diminished, later abolished, and finally there is an extravasation into the bowel lumen (19 and 20). Venous stasis appears to play a part in that ulcers may appear very shortly after distention begins (21). Diminution of the arterial supply from periarterial pressure of distention must also have its deleterious effect. In experimental distention, by distending the loop of intestine with air, the blood pressure rises so high that there is obtained a typical cardiac failure and death (22). This is presumably due to the increased resistance to the venous flow through the distended loop, and may have its counterpart in the obstructions seen clinically, in which death may be due to a cardiac failure superimposed on a toxemia.

Some observers (27) believe the increase in nonprotein nitrogen is in reality only a concentration due to water loss, and that it can be prevented by administration of sufficient water. Others find a moderate loss of water, especially in high obstruction, but it is an inconstant phenomenon and apparently not related to the severity of the symptoms. A marked decrease of blood chlorides is noted in almost every animal and this appeared to be related to the frequency of vomiting (3). However, this loss of chlorides is not to be accounted for by the loss of hydrochloric acid through vomiting (4).

Investigators have found that dogs treated with sodium chloride solution survived the same degree of toxemia approximately six times as long as the average animal, and they claim that by supplying sodium chloride the pseudo-uremia or nonprotein nitrogen increase can be prevented (29).

Others find that sodium chloride is of no appreciable curative value (30). If strangulation or marked distention do not occur, an animal may live as long as 21 days with 800 times the lethal dose of toxin in the loop.

#### TREATMENT

In view of the alarming mortality, it behooves us to strive to approach as far as possible, some standardized treatment. Especially for those cases which turn to surgery as a last resort and are very frequently in extremis. This is difficult because every case is a law unto itself. Rarely do we see a case which strictly conforms to the text book descriptions, which is further proof that there is no "never" and no "always" in surgery.

Chas. H. Mayo, in speaking of intestinal obstruction, says: "In many years of active surgical work I have not seen death occur as the result of an unnecessary exploration. I have seen many saved and some die of disease, but many died solely because exploration was undertaken too late" (23).

The procedure which I believe will decrease the high mortality in acute intestinal obstruction, particularly in those cases which are seen late, is jejunostomy and jejunostomy only for the time being. This is deliberately a broad statement. The toxemia, in such cases, is the condition requiring relief, the obstruction itself, perhaps necessitating extensive surgery, with its inevitable shock, can and should wait until the patient has returned to his more nearly normal physical status. There are, of course, exceptions and modifications to all rules, but these are left to the good judgment of the operator. However, when in doubt he should stay on the side of safety and limit his operative activities to the jejunostomy.

In those cases in which the cause of the obstruction can be easily and quickly relieved, without further shock to the already poor surgical risk, this of course should be done. Also where there is imminent danger of gangrene or peritonitis the involved bowel should be brought outside the

abdominal cavity as the first stage of the Mikulicz operation, and an enterostomy done here in addition to the jejunostomy so that complete flushing of the obstructed proximal portion can be accomplished. It is not always wise to relieve the obstruction of any duration before jejunostomy, for by so doing the patient may be overwhelmed by the toxemia resulting from the rapid absorption of the contents of the obstructed loop by the dehydrated intestine below the obstruction.

Dale has shown the decrease in resistance caused by ether anesthesia (24). There is no such lowered resistance caused by nitrous oxide; hence it should be used. In the very bad cases the jejunostomy should be done under local anesthesia, even in view of the fact that a satisfactory exploration of the cause of the obstruction cannot be done. Gastric lavage both before and after operation is of utmost importance in preventing serious dilatation.

The Coffey-Mayo enterostomy offers, I believe, the best chance of success. The Coffey enterostomy is performed by an incision about two inches in length in the longitudinal axis of the intestine extending down to the mucosa; a purse-string suture is now put in the pouting mucosa in the distal end of the incision and the mucosa incised inside the purse string. Now a large soft rubber catheter is placed into the intestine in an aboral direction running down three to four inches, the purse string is drawn firmly around the catheter and the muscularis and serosa closed over the catheter, thus forming a tunnel through which the catheter enters the intestine obliquely. The Mayo addition is the passing of the catheter through layers of the omentum so that the omentum comes between the enterostomy proper and the abdominal wall (23). The Coffey oblique enterostomy closes more quickly than the direct; the Mayo feature gives greater protection against leakage, greater motility to the intestine, and a quicker closure (25 and 28).

Jejunostomy is preferred because it is

at or near the probable seat of origin of the toxin. It is more easily located and identified than the lower portions because of its attachment at its beginning by the ligament of Treitz; its walls are thicker and its lumen larger, making possible a more firm closure and being better able to afford the partial stenosis resulting from enterostomy. The jejunum and lower intestines can be thoroughly drained by jejunostomy and oft-repeated instillations and siphonage of saline or sodium bicarbonate solution (26). Fluids and nutrition can be supplied by infusions into the rectum, under the skin, intravenously or if necessary by blood transfusion.

In conclusion my plea is for a more frequent use of jejunostomy as a life-saving measure; thus allowing the patient to return more nearly to physical normalcy before the more radical relief of the obstruction.

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## DISCUSSION OF PAPERS OF DRS. FRANK WARD SMYTHE AND LYLE B. WEST.

DR. ROBERT CALDWELL, Nashville: These papers we have listened to have been most interesting and timely. The subject, as we know it today, has been thoroughly covered by both papers and there is very little that might be added.

I think the only thing that might be emphasized is the early diagnosis in these cases. Dr. Smythe gave us an excellent way of handling these cases. They are all based upon surgical treatment and all surgeons are familiar with this.

The various types of toxemia, what it is and what it is not, as you noticed from Dr. West's paper, shows that we have not yet discovered the toxemia. About the nearest we can arrive at this is to say that it is a toxemia, and in our efforts to cure these patients use the measures indicated by the first speaker.

The thing that should be emphasized here is the early diagnosis and early interference. That is our hope at present for these obstructive cases, and if the diagnosis is made early then the relief is positive. Otherwise, at this time no matter what treatment is employed, if it is a late case our result is unfortunate. So the only thing I can add is a plea for the early recognition of these cases and, as suggested by one of the speakers, early interference when the indications seem to give us a fairly positive diagnosis of obstruction.

DR. V. D. HOLLOWAY, Knoxville: I do not know of any condition the treatment of which more indicates a real surgeon than a post-operative ileus or obstruction. There is nothing that gives you as sick a feeling in the pit of your stomach as having to go back and reopen an abdomen for the symptoms of obstruction.

I think every surgeon here has had that feeling and no other condition of our patients makes us more appreciate the co-operation of our associates.

We are apt to march along and do as we alone think best; we would often profit by having our anaesthetist and assistant go in and examine these cases. The anaesthetist, if a man of wide experience, has seen many such cases over-operated on and knows how large the mortality really is. They can help us decide as to the desirability of opening the abdomen. This condition requires more surgical judgment and decision than most things we are called upon to face in our work.

I believe the early diagnosis cannot be stressed too much, but I think we must assure ourselves that nothing else can relieve this obstruction.

It is not easy to determine definitely that this patient has had the best nursing or that enemas and other means have accomplished all that they might. Unless positive of this, have one cc pituitin given and give the high enemas yourself and do the gastric lavage yourself and you may empty the bowel of an enormous amount of mucous and get by without the operation.

I believe that you should convince yourself thoroughly that an operation is the only remedy for we all have reason to dread going back into the abdomen as we so often do, then have to sign a death certificate.

In prevention, I believe that pituitin, enemas and gastric lavage are of great value, giving the pituitin just before you use the high compound enema and repeating it every three to four hours for four doses and using gastric lavage as often as is indicated.

I believe in doing the primary operation; too often the death knell is sounded by a rough technic; packing the abdomen with gauze when a single layer of rubber tissue would hold your intestines without trauma. Personally I have used rubber dam for a number of years in place of

gauze in the abdomen and have had much better results, much less gas pains and in every way an easier convalescence.

There is the morphine as mentioned by the speaker, and I believe in it; the question of the anaesthetic being the proper one and so on.

I see many operators pack the abdomen with a whole roll of gauze in doing an hysterectomy and tell the interne to hold it down, and he holds it down literally. When this packing is removed the intestines are mashed flat and are red from trauma and ileus is likely to occur. Rubber dam properly placed would have held the intestines, and when removed you would have seen normal looking viscera.

If we must operate for the obstruction, then do it early and the Coffey-Mayo technic is good. A little gas or novocain; pick up the first distended loop of intestine that appears; open it and thoroughly empty it; place your drainage tube properly and give the patient a chance to get well. If you can secure the omentum and pull the rubber tube through it, it is of great assistance; if you cannot find it easily I would not mess around looking for it; if you can find it, it is valuable. In after treatment be sure this tube does not plug up, and if it is not draining freely, flush it open with a syringe and saline.

At times washing the intestines through the tube with saline is a good plan and rids your patient of more toxin. Let the nurse keep the lower bowel empty with enemas. In many of these cases the tube slips out of the bowel on the fifth day and the bowels move normally and your patient will recover without any further operation.

DR. HUBERT A. ROYSTER, Raleigh, N. C.: There is a certain fatalism about operating in intestinal obstruction. Some of the cases in which you do an enterostomy will die in spite of the enterostomy, and some of the cases in which you do not do it will get well because you do not. We may discuss as long as we please the methods of doing enterostomy, and we may wonder many times over whether we should do it or not. I find in every audience where such things are discussed a number of men who say that every case in which they do an enterostomy will get well, and another set will say they have done fifteen or sixteen enterostomies and all have died. Is it the enterostomy or is it the surgical sense of the surgeon?

The keynote has been struck, I think, when we say the word "early." That should be painted all over the picture. If enterostomy is done early it is as good as doing a thorough operation, but if done late it is rather useless. It may be said that some of the early cases do not need it. I think the question at issue is for the case to get in early enough not to demand the enterostomy, and then, if it is necessary to do it, do it as quickly as we can.

I like to feel that in intestinal obstruction so far as diagnosis is concerned, we have one broad principle. Separate in your mind the matter of those that are entirely surgical and those that may not need any surgery at all. The latter cases comprise, first, those in which you have a paralytic ileus following abdominal operation in which the patient may be tided through by some means, as mentioned by Dr. Holloway, without any interference. Second, separate the cases of so-called fecal impaction from the other cases of intestinal obstruction. Many times if thorough examination is made the diagnosis is evident and you save yourself a lot of thinking. I once opened an abdomen for an acute exacerbation of a chronic obstruction due to what we thought was malignant disease in the bowel, and after operation I examined the rectum and found that the disease was very low down—cancer of the rectum. Very commonly in elderly people we find fecal impaction which presents the whole picture of intestinal obstruction, and that is not operative.

I have not been as fortunate in the use of pituitin as of eserin, giving it in series of doses and waiting to see the effect. The particular caution is that if you give eserin in cases of organic obstruction having a band of adhesions you will get unfortunate results in some cases, but there is nothing that clears the picture up in certain types of inorganic obstruction as does eserin.

I think the classification given by the first speaker was interesting. I feel that there are cases in which you do not have to open the intestinal canal, and, in the cases in which we are compelled to open the canal to remove the obstruction. We must not forget the tumors of the bowel itself, which produce obstruction. The anastomosis cases are few and far between where you will get an opportunity to do them at the primary operation, but wherever those conditions are present and the patient's condition will stand it, it is not unwise to attempt it. At least in the cases like intussusception you can treat them as you would an enterostomy.

The more we discuss these cases the more we find out that we do not know what kills the patients. Let us be particular and very sure that the surgeon does not kill them.

DR. RICHARD A. BARR, Nashville: I like to agree with my friend Dr. Royster so well that I am glad I can talk right in line with what he has told us.

In discussing acute mechanical obstruction we are doing it as if we were discussing a disease, whereas it is only a symptom. It is perfectly reasonable to do this, I suppose, because the symptom is so obvious, but we cannot institute proper treatment unless we make a proper diagnosis of the cause producing the obstruction. You cannot handle acute obstruction of the small

intestine by a band as you handle cancer of the colon, which may produce acute on top of the chronic obstruction. The pathology is the important feature. It is possible to produce a mechanical obstruction for weeks if done without damage to the blood supply of the bowel without causing serious ill effects. It is the damage done the nerve and blood supply of the gut that is important.

In connection with poisons that are formed, I think we might catch one point in the strangulation of a hernia. Strangulation in hernia where we have the general cavity of the peritoneum shut off will give us a much better chance to save the patient than if we have to go within the abdomen. These hernia cases suggest that the general peritoneum must cut a great big figure in the post-operative history of mechanical obstruction. The danger of absorption from the flaccid bowel below the site of obstruction never occurred to me as being very important. I think that never kills the patient. I think the sound mucous membrane does not absorb the poisons. It is the damaged mucosa which gets the dose before operation that the patient dies from, not the absorption after relief of obstruction, in my opinion.

With regard to enterostomy, I have had much the same opinion that Dr. Royster has expressed. Every enterostomy that I have ever done for acute obstruction has proved fatal, other than for some fairly acute symptoms in connection with cancer. Enterostomy done for acute obstruction of the small intestine has always failed to save the patient.

I do not see much advantage in jejunostomy over keeping the patient's stomach washed out. My observation is that they do just about as well with flushing of the stomach as with jejunostomy. I cannot visualize washing out the small bowel, as has been suggested here, and getting the fluid back again. That is more than I could hope to do. I would not attempt to irrigate the small intestine through the enterostomy tube.

I believe there is a medical side to mechanical obstruction. There are cases with acute symptoms in which if peristaltic pain is checked with morphia, the stomach is washed out and water supplied by bowel the patients get over the symptoms very quickly. This is particularly true of old people with cancer of the bowel who develop suddenly very acute symptoms.

DR. LUCIUS E. BURCH, Nashville: I regret that I am unable to agree with the theory advanced by Dr. Barr. In my opinion normal mucous membrane will absorb any substance or poison much more quickly than a diseased mucous membrane.

There are a few points that I think are important in connection with intestinal obstruction, which I should like to emphasize, and for the

most part have been brought out by the two speakers. First, the early diagnosis and early operation of intestinal obstruction. Second, the use of a local anesthetic, aided by nitrous oxide and oxygen if necessary. Third, as little surgery as possible in advanced cases. Fourth, use of the stomach tube before and after operation. Fifth, and this is quite important, give these patients large quantities of fluid. In my opinion this is best given under the skin, using one quart of saline and ninety c.c. of one-fourth of one per cent of novocain. In carrying out this procedure two needles are necessary, one under each breast or in each flank. If this technique is carried out, the fluid will be absorbed in from thirty minutes to two hours and without pain. If intestinal obstruction is suspected, an exploratory operation should be carried out.

DR. FRANK D. SMYTHE, Memphis: I wish to discuss briefly the post-operative treatment of cases justifying enterostomy. Granting that everything has been done that could have been done to protect the patient against avoidable shock, and that the operation has been performed technically correct, we have no assurance that the patient is going to recover, and without intelligent post-operative treatment many of them do not recover. Many patients succumb to peritonitis, but many more of my patients recover from peritonitis at the present time than did recover from peritonitis before I learned how to treat peritonitis.

I wish to emphasize the value of gastric lavage in the treatment of these cases. I am very much of the opinion that many cases are saved by gastric lavage where it is practiced sufficiently often. I have never been able to understand why interns and nurses are so reluctant when it comes to washing out a stomach. They seem to regard it as a monumental undertaking and a complicated procedure. For some years it has been my custom to write orders to the effect that the tube is to be dropped into the stomach every hour or two as long as the fluid returns stained, or the distention persists.

In addition to gastric lavage the position of the patient in bed is of importance, and much harm is being done, and has been done, by keeping the patient with general peritonitis in an aggravated Fowler position. The tax upon the heart is too great in many of these cases.

Hot Applications.—Cloths wrung out of hot water and applied to the abdomen and changed sufficiently often to keep a hot cloth in contact with the abdomen all the time is, we think, of immense value. A nurse cannot carry out this treatment if she is disposed to soldier on the job.

Mental and Physical Rest.—Rest cannot be maintained without proper medication, and as a routine in the treatment of aggravated cases from 1-12 to 1-8 of a grain of morphine is ad-

ministered sufficiently often to keep the patient quiet, practically asleep, free from pain, with respiration down to 12 to 15 per minute. It is rarely necessary to continue this line of treatment for more than thirty-six or forty-eight hours. By that time the patient is either out of imminent danger or has answered the last call.

I wish to supplement the remarks of the last speaker concerning the value of fluids. An abundance of fluids is not only advantageous, but is a life-saver. To be effective it must gain admission into the general circulation. We have long since abandoned the Murphy drip as a means of accomplishing this object. It does some good, but is inferior to hypodermoclysis. A quart of water will be taken up in two or three hours, generally speaking. A two per cent of a three per cent glucose solution in saline is employed as a routine. It is important to test the temperature before administration, as it has happened to patients of mine on two occasions that the tissues were practically cooked because the solution was of too high a temperature. Such an accident I consider inexcusable, and is the result of criminal carelessness or dense ignorance. We use the Bartlett method.

The measures suggested will prove successful in such a large number of cases that one is justified in believing that a patient not dying upon admission to the hospital will recover. The mortality incident to peritonitis, however, when treated in a slipshod manner, remains frightfully high.

DR. JERE L. CROOK, Jackson: I want to get in while the water is fine. First, I wish to congratulate the fathers of two worthy sons of two distinguished sires for the excellent contributions of the two young doctors we have just listened to.

I believe in any type of intestinal obstruction we should differentiate a little more closely, as the mortality is largely dependent upon the type of obstruction. We have the type where there is simply an obstipation of the bowel, an interference with the fecal current. That type will get well under almost any kind of treatment. Then there is the post-operative ileus, and there we have to consider interference with the nerve supply. Then the type where there is interference with all three currents, the fecal, the nerve and the blood current. That is represented by intussusception and by volvulus, and the mechanical band which nothing will relieve except snipping the band. There we get a high mortality. In that type we have illustrated the theories advanced by the second speaker—the toxin absorption. Unless you drain the bowel you will probably have a dead patient. Several years ago Moynihan made this statement: "Any case of intestinal obstruction where enterostomy has not been performed has not been properly treated."

Simply opening the upper part of the bowel with a gall bladder trocar, draining the contents and closing it with a pursestring suture has been successful in many early cases. If the case is delayed one should put in a tube and it can be done very quickly. Wesley Long has given us an excellent method of doing it with a cautery. Speed is very desirable. I do not think the elaborate method of Coffey is necessary. One can do it safely and quickly under novocain. A recent case I operated on three times, first for a ruptured appendix; the patient got along splendidly for six days and then developed a complete ileus. In this case I did a rapid enterostomy under novocain anesthesia without removing the patient from his bed. A second ileus occurred four days later and I repeated the operation, at the same time opening a secondary abscess and breaking up adhesions of the bowel to the belly wall. The obstruction was completely relieved, but the patient died four weeks later from gangrene of the lung.

DR. LEON L. SHEDDAN, Knoxville: There is one phase I wish to speak on; the question of post-operative ileus versus intestinal obstruction. I think many patients die of post-operative ileus, which is true intestinal obstruction. Those of us who have these patients in the hospital get the same feeling Dr. Holloway told us of. Our extreme aversion to going a second time into the abdomen makes us hope and pray that it is ileus and not obstruction, and makes us delay too long. I saw this beautifully demonstrated last year at the Mayo Clinic when Dr. Charles Mayo came in and told us that he had an emergency. It was a post-operative obstruction; he had hoped it was an ileus and he said he was afraid he had delayed too long. He had to do an enterostomy because of the fact that there was so much distention.

I have had a number of cases of positive operative obstruction. Post-operative ileus is not as frequently met with as we suppose. The cases that I have had have been accompanied by some peritonitis. If there is no peritonitis you are not apt to have an obstructive ileus. Let us not keep the patient in the hospital post-operatively calling it an ileus when we have a true mechanical obstruction and it will do so little harm to go in and relieve it.

I am glad Dr. Burch corrected Dr. Barr about his physiology. I am constrained that Dr. Barr does not know much about doing enterostomy if he has had fifteen or sixteen and the patients have all died. I think there is no question that if there is a properly placed enterostomy you do not have to wash out that stomach every ten or fifteen minutes. If it is properly placed that is not necessary. There is no question but that an enterostomy done under proper circumstances is a life-saving procedure. I am not in favor of putting it so high up. I had a case with Dr. Smythe and we did a very high enterostomy, up

in the jejunum, but this drainage was so intensely irritating to the skin over the abdomen that the pancreatic juice digested the whole of the epithelium over the abdomen. That is one consideration that must be remembered in doing the high enterostomy.

DR. WILLIAM D. HAGGARD, Nashville: Just one word to emphasize the importance of gastric lavage. I wish to insert one valuable point, and that is the wisdom of spraying the larynx with cocain before introducing the tube. That is a simple procedure but very helpful. We see patients so distressed, and we have seen patients injured, by introducing the tube, but if you will spray the larynx with cocain and wait a few minutes the tube can be introduced with the greatest ease.

Regarding Dr. Barr's statement that the mucous membrane does not absorb below the obstruction, I had an experience on which I am certainly sold on that proposition. A patient was brought in who had not vomited, but just as I walked into the room he very obligingly vomited fecal material. We operated within an hour. He had a simple closure with adhesions and I distended it very easily. I could see the collapsed bowel below and the distended bowel above, could see the obstruction being relieved, but I could not see the poison that went down into the obliterated loop, this normal loop that was ready to absorb this poison, and while it was the simplest possible exploration, the man was dead in six hours, with a temperature of 106 degrees F. If that is not an example of toxemia from letting this foul five-day obstruction go down into the bowel I do not know anything about pathology at all. If I had put in a tube and let out that enormous amount of pent-up material I would have saved my patient, or if I had done an enterostomy, as we do nowadays, he would have had a better run for his life.

One elementary fact: The statement was made that purgatives should be withheld in all abdominal conditions. Of course, that is just carrying coals to Newcastle before this audience, but this is just the nucleus of the previous method of stating that it should be our business to carry this to every one and try to prevent the promiscuous giving of purgatives in all abdominal conditions. Then I think we will have a better than fifty per cent mortality, which has been our heritage for so long a time.

DR. RICHARD A. BARR, Nashville: I did not mean to say that the normal mucous membrane would not absorb strychnia and various other poisons which might be administered. I said it was particularly well prepared to prevent absorption of poisons continually elaborated in that tract. If Dr. Burch will take some of the intestinal contents and inject them intravenously, he will find that the sound mucous membrane

has been protecting that patient from absorption. Years ago Draper Maury made some experiments as to the cause of death in these cases. He found he could produce a complete obstruction, and so long as he did not damage the mucosa there was no absorption of poison, but as soon as he damaged the mucosa there were serious ill effects. Some of the laboratory men figure that it is the proteoses that kill the patient. The normal mucous membrane will not absorb such poisons because it is made to protect us against them. It will only absorb proteids in the form of amino acids. However, the gut whose blood supply has been interfered with, does allow the passage of bacteria through its wall and does absorb toxic material.

If I had had the case Dr. Haggard had I would possibly have been inclined to emphasize the danger of absorption from the lower bowel down, but I do not think his case can be said to prove anything except that the patient died—possibly from poisons absorbed before operation, possibly from the anesthetic, possibly from something not apparent or suspected.

Dr. Sheddan reported a case from the Mayo Clinic, and since that is our supreme court, it is rather presumptuous to question the findings. However, he did not say what type of obstruction was found, or that the point of obstruction was found at all. A man can delude himself very readily and when one only finds distended guts, and says he has done an enterostomy for mechanical obstruction, he is hardly justified, for he really does not know any more when he gets out than when he went in.

DR. FRANK WARD SMYTHE, Memphis (closing discussion on his paper): I enjoyed and appreciate very much the discussion of all you gentlemen. The reason I wrote this paper was not because I expected to disseminate information, but hoped, by stimulating a liberal discussion, to gain some.

There are just a few points that I would like to mention. First, in regard to those conditions which follow surgical operations in the abdomen, when we do not know whether or not the patients

have mechanical obstruction. I lean very strongly toward Dr. Burch and Dr. Sheddan's opinion, and when I am not positive that it is an ileus, I open them up. If we do not do an enterostomy on ileus, they occasionally get well, but in mechanical obstruction they do not get well. I do not see much difference as to which method you use if you get the hole in the intestine. We use the catheter with two windows in the sides in order to be sure that it does not lean up against the mucosa and become obstructed.

In regard to the diagnosis, I think we should not lose any special amount of time in wondering what it is. If we open the acute surgical abdomen, then we can handle what we find.

DR. LYLE B. WEST, Chattanooga (closing discussion on his paper): I think Dr. Barr has heard almost enough about the normal mucosa. However, experimentally, the material taken from an obstructed loop of intestine and injected into the intestinal lumen of the normal dog will give a toxemia. Not as rapid and severe as the intravenous injection, but there will be a toxemia.

He also doubts the ability to wash the intestines through an enterostomy. Mechanically, we have the loop and remove the gas and contents, not by siphonage every two or three days, but every hour or half hour or even continuously. We may have to stand by and see that it is being done properly. It is a matter of injecting fluid and establishing siphonage and getting a large proportion out. Dr. Burch and the other gentlemen have certainly hit the thing as I tried to bring it out, to do as little surgery as possible. Do the enterostomy and get the patient away from his toxemia so that at least we will be sure that if the patient dies it will be due to the toxemia and not to the surgery.

I did not mean to convey the thought about the catheter, that we use only one hole. Of course, if other holes are cut in the catheter, it allows more material to get out. The catheter has a smooth, round end, and does no damage to the mucosa when it is introduced, hence is preferred to the ordinary drainage tubing.

## DEAFNESS FROM SYPHILIS\*

JULIAN B. BLUE, M.D., F.A.C.S., MEMPHIS

FROM the study of the effect of syphilis on the organ of hearing, it would seem that the exact method pursued by it is not always the same, nor is it always understood how it accomplishes its end.

In this paper the effect of acquired syphilis on the ear will first be considered, followed by that of hereditary lues.

Syphilitic disease of the middle ear is generally the result of ulcerations or condylomata extending from similar conditions in the nose-pharynx. It would be extremely rare to see a primary sore at the orifice of the Eustachian tube.

The sign and symptoms of such an affection of the middle ear would vary according to the virulency of the infection. Anywhere from mild middle ear inflammatory symptoms to that of a great deal of destruction of the drum and involvement secondarily of the labyrinth, with even necrosis and destruction of the tympanic wall and mastoid process and other parts of the temporal bone, with extension to the cranial cavity with a fatal ending may be found.

The diagnosis is to be reached by the presence of the characteristic signs of syphilis, the Wassermann reaction and shortened bone conduction. It is, of course, to be remembered that syphilitics can have ordinary middle ear disease.

The prognosis of such type of deafness following this invasion depends on the virulency of the infection and the resistance of the patient and the vigor of the treatment. Should scars result from the ulcerations, this would seriously interfere with hearing. Other cases would be completely restored to function.

The treatment consists of anti-syphilitic treatment combined with local treatments of mercurial washes.

The involvement of the internal ear direct and the eighth nerve, has been observed more frequently than the middle ear type.

Deafness from syphilis due to other than middle ear involvement is the result of syphilitic disease of the labyrinth or a neuritis of the auditory nerve or to both.

The opportunity for post-mortem study of such cases has not been so good. The following changes have been found: Thickening of the periosteum of the vestibule. Another observer found this same condition accompanied by the stapes being immobilized, with the connective tissue between the membranous and bony labyrinth infiltrated with small cells, Corti's organ and the semi-circular canals infiltrated and the eighth nerve normal. Another observer found the acoustic nerve to be the seat of a round cell infiltration. The neuritis may be the extension from basilar meningitis. (These quoted from Politzer's book.)

Involvement of the labyrinth and eighth nerve rarely occurs early in the disease, though Politzer observed a case of involvement of the labyrinth on the seventh day after the primary lesion appeared. The time in the course of the disease that these parts are attacked varies greatly.

The cases seen by the writer have occurred most frequently after a few years' duration of the disease. The ear involvement is often the only manifestation seen. The onset varies from a slowly acting condition to that of a rapid destruction of hearing; even a sudden loss of hearing.

The following case seen by the author is an illustration of this sudden loss. An adult male, white, age fifty, merchant, in

\*Read before the Ear, Eye, Nose and Throat Section of the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

excellent health, contracted syphilis twenty years ago and had very little treatment. He presented himself with the following history: Suddenly became deaf in right ear while at work a few hours previous; noises in this ear, no pain, no dizziness at any time. Examination showed ear drum normal in appearance; tubes patent. Hearing tests revealed total deafness in the right ear, using the noise apparatus in the left ear. Consultation with an expert internist at once. Blood Wassermann negative, as other physical tests were. Patient advised to go to hospital for further observation, spinal puncture and study of the fluid and treatment; this refused. This case lacks the positive Wassermann to complete the chain of evidence, but it is the best explanation to be found for the deafness and is mentioned here because it conforms to the description of cases mentioned by the authors. Other cases observed show a slow loss of hearing.

One case reported a deafness in the left ear two years before the right became involved, the second ear becoming involved much more quickly, only two days before seeking relief. His hearing when seen was conversational voice four inches in the better ear; in the worse ear he could hear only very loud voice close to the ear.

Several other cases seen gave this history: that only one ear was affected when examination revealed a decided loss in the other ear. It is a remarkable thing how much hearing some people will lose without being very much impressed as to the seriousness of it.

Another case with this history two years ago became suddenly deaf in the left ear; three weeks ago the right ear became involved. Examination showed the left ear totally deaf and the right ear conversational voice sixteen inches; two weeks after treatment with arsphenamine by her physician she heard conversational voice at fifteen feet; right ear no hearing. Treatment continued. An examination made one year after treatment started shows whisper at twenty feet for left ear with right

totally deaf. Turning tests made at first and after one year elicited no nystagmus nor vertigo.

Another case seen March 18, 1924, states that he first noticed loss of hearing in December, 1923, and hearing has been going fast since then. When examined he had hearing of right ear whispers one foot, left ear whisper six inches. He is now in the hands of his physician for anti-syphilitic treatment, and it is too early to say what the result will be.

Another gives the history of an attack of influenza three months before consultation. Examination revealed total deafness in right ear with conversational voice heard at fifteen feet in left ear. She was referred for treatment and was seen one month after treatment was instituted with hearing in left ear of whisper at twenty feet. Right ear still totally deaf. She was never seen again.

Both ears are generally involved, one more than the other. The most common symptoms besides the deafness is the tinnitus. This seems to be ever present and may be worse in one than the other ear. Even after all hearing is gone and often after persistent treatment this ringing is still there.

Dizziness is complained of by some; others do not note this symptom. Some mention slight dizziness; as a rule there is no pain.

It is interesting to note that several observers have seen the condition made much worse by blows on the head.

The diagnosis is made by the shortened bone conduction, the symptoms of nerve deafness, the history, the positive Wassermann, though a negative Wassermann must not be taken to mean no syphilis. The shortened bone conduction is very characteristic, and any case of shortened bone conduction with apparently normal hearing should make one suspicious of syphilis. Of the cases seen by myself all have had either no bone conduction or shortened bone conduction.

Beck, of Vienna, several years ago ob-

served that the bone conduction of eighty per cent of syphilitics examined by him with normal hearing had shortened bone conduction.

With the Weber test the fork is lateralized in the unaffected or less affected ear.

The prognosis is always to be guarded. Some cases show a speedy and remarkable come back after anti-syphilitic treatment; others are not so fortunate, and some receive no benefit. It is said that cases which relapse have a very poor outlook.

Treatment consists in the giving of anti-syphilitic treatment. Here there seems to be some discussion as to whether the arsenical drugs should be used. There are those who contend that the condition is likely to be made worse by the injection of these. Others insist that the lack of improvement is because there is insufficient treatment given. The cases seen by me have had arsphenamine given by their respective physicians and have showed no bad effects from taking the drug, and some have shown a very good recovery of hearing.

Deafness from hereditary syphilis is generally found associated with interstitial keratitis and Hutchinson teeth thus making the classical triad. This form of deafness is generally seen in the poorer classes. In people in which little or no treatment has been received and in which over-crowding, under-nourishment, and other poor hygienic conditions surround. The better classes also have syphilis, but they have more treatment and better living conditions, which accounts for the lower rate of this form of deafness.

The loss of hearing may come on early in life or make its appearance at the time of puberty.

The changes in the hearing apparatus due to congenital lues are described as a neuritis following a syphilitic meningitis or to changes in the bony capsule of the labyrinth.

The prognosis is not good and in the author's experience is not nearly so good as

that of deafness from acquired syphilis. The treatment is the routine anti-luetic.

#### DISCUSSION.

DR. REESE PATTERSON, Knoxville: Doctor Blue has read a splendid paper on a very big subject. In the short time allotted he could not possibly do more than touch in a very brief and general way on the question of syphilis of the ear. In my few remarks I simply want to bring out some of the details of one or two phases of the question, more particularly in relation to the diagnostic features of syphilis of the ear and the tests pertaining thereto.

It has been known for a good many years that the syphilitic infections have a marked influence on the eighth nerve, with resulting impairment of hearing and at times complete loss of hearing. It is a common experience of otologists to find that in some period of syphilitic infection the eighth nerve is involved. Our time-honored method of procedure in finding this out has been the functional tests and the tuning forks. The classical symptoms of syphilitic involvement of the ear are those of nerve deafness—namely, shortening bone conduction (Schwabach), the best hearing in the non-affected ear (Weber), and of course some shortened air conduction. Some men claim there is actual bone shortening without shortening of the air. I believe that is relative. We usually have a plus Rinne. The great trouble with these tests is that they are liable to great error in making them. In the first place, they depend upon the intelligence of the patient; there are subjective sensations, and oftentimes the findings are vitiated by middle ear involvement at the same time. There is no reason why a man with a syphilitic condition of the ear might not also have middle ear defects, so that instead of a shortened Schwabach you will have a lengthened one. I think that is one reason why the functional test has fallen into disrepute and is not used as much as formerly. I feel that the newer tests which take in the vestibular branch of the eighth nerve as well as the cochlear should be used more. Are we not in danger of becoming unscientific when we can get results with almost mathematical precision? Is it any more scientific to say here is a patient with a shortened Schwabach and a plus Rinne, than to say here is a patient who after turning ten times to the right has a horizontal nystagmus to the left of twelve to fourteen seconds duration instead of twenty-six? In that way we are expressing the condition of the integrity of the cochlear branch of the eighth nerve with mathematical precision. If the patient is a fool you do not have to depend upon his subjective sensations or his statements. You are looking at the eye and you can tell how long duration you

have. These tests bring out some very definite information—first, as to the age, in the early diagnosis of syphilis; second, in early diagnosis of syphilis of the nervous system; third, in early recognition of recurrence, and fourth, as to therapeutic measures.

Three or four years ago I had a patient, a young man of eighteen, who had total loss of integrity of the eighth nerve. I put him in the chair and turned him fifty times, and he stood erect and saluted me without any nystagmus or dizziness. His cochlear branch was 60 per cent gone and he had lost his hearing within four or five weeks. I watched that young man clear up and he completely recovered in three months.

Fifth, these tests help us to determine whether a case of syphilis is cured. Ear examinations can be useful in several different ways. If a patient has a suspicious initial lesion, if after turning him he has eighteen second nystagmus instead of twenty-six, you can suspect syphilitic infection. If after three or four more days you turn him and he has eleven seconds of nystagmus instead of twenty-six, you have still more reason to suspect syphilis. To be sure there are other factors that are liable to bring on typical nerve deafness—measles, mumps, scarlet fever, diphtheria, gastrointestinal toxemias. But here is the differentiating point. In the normal type of deafness the loss of hearing is a pre-existing condition and in your series of tests it does not change—it remains just as it was. Whereas in a syphilitic condition there is a progressive bilateral deafness that arouses suspicion in regard to syphilis of the eighth nerve. In all of these tests I think we must make certain allowances, and the future will perhaps give these tests their proper place in medical literature. Our authorities estimate that about five per cent of cases of syphilis are of the nerve type. If these tests do nothing more than enable us to recognize early disease of the nerve they will be worth a great deal to us. It is a curious fact that of all the nerves of the body the eighth is the most amenable to diagnosis. No other nerve is capable of such delicate testing through the cochlear and vestibular branches as the eighth. I feel personally that we owe Doctor Blue a debt of gratitude for bringing this subject to our attention, and I believe if we study this question more and realize the delicacy of these tests and how many early cases of syphilis can be recognized by the proper tests, I believe the otologist will be consulted as frequently in regard to hearing tests and these tests will take their place along with the Wassermann as an early indication of syphilitic infection.

I enjoyed the Doctor's paper very much and I believe he has given us something very timely to think about.

DR. J. H. KINCAID, Knoxville: I want to say that I appreciate this paper very much, as

we all do. It is a very timely paper upon an important subject—a subject that takes a good deal of thought if we get very far with it. I am sorry that Doctor Johnson is not here. He is more able to discuss this subject than I am, but there are two or three points that I want to mention. One is that we all recognize that the bone conduction is naturally shortened, and while that is true, in these cases of syphilis we will also find that the air conduction is lengthened. So we should not lose sight of this fact, that while we are dealing with shortened bone conduction, we are also dealing with an exaggerated nerve conduction.

I think also that bilateral deafness is an important thing to remember. Almost universally we find in these cases of syphilis that we have a bilateral deafness.

And we must not lose sight of other diagnostic points as we go along. We will also find in the nasal passages some help. We will always find—or nearly always—a marked turgescence of the turbinates, and I think it is well to watch for this.

I think the prognosis in these cases should be guarded. We cannot promise our patients as much as we can in the ordinary case of syphilis. As we know, the nervous types of syphilis are late in their appearance, and when syphilis attacks the nerves of the ear I think we are up against a hard proposition. We are never in position to promise our patient very much.

Of course, the cure depends upon the stage of the disease and the length of time which the patient has been suffering.

I think Doctor Patterson covered the subject very thoroughly and I just wanted to mention those few points.

DR. J. A. STUCKY, Lexington, Ky.: There are two points I would like to mention for the purpose of emphasis: First, when we do not have the evidence of the laboratory findings to confirm the clinical diagnosis of syphilis, do not wait for a positive Wassermann, but treat your patient. I have had some embarrassing results because the Wassermann was negative, both blood and spinal fluid, and yet clinically I felt sure it was a case of labyrinthine syphilis. I lost time. I think we should treat the patient if the clinical evidence points to that cause.

Second, I am gun-shy on the intravenous arsenophamine treatment of these cases, and also in acute optic nerve involvement. I have seen one or two cases of deafness with very ugly results. In other words, the patient was made completely deaf and a very disagreeable vertigo accompanied the deafness, so that he had to be kept in bed several days. I have seen two cases where there was acute optic nerve lesion, undoubtedly syphilitic, where intravenous treatments produced total blindness. I am more in favor of the inunction

method with the iodides. When these cases are referred to me I refer them back to a syphlographer with instructions to push mercury and the iodides to tolerance.

DR. JOHN SHEA, Memphis: The Wassermann test in syphilis of the ear is dependent upon two things: If the Wassermann is positive then it is a disease that has been brought to the ear by the blood stream. But there is a condition where the blood Wassermann will be negative and the spinal Wassermann positive. Then a condition has developed like jaundice—when you have jaundice everything may be jaundiced except the spinal fluid and spinal cord. In that type Doctor Solomon, of Boston, has shown that it is useless to give them any medication and expect to get results through the blood stream. If you meet a case of neurosyphilis affecting the eighth nerve your blood Wassermann is negative; you are wasting your time giving that patient any medication that is expected to go to the source of the trouble by the blood stream. You have to resort to intraspinal injections. If the deafness increases after the first test it is often an indication of the last convulsion of the nerve before it is getting ready to die. That is the basis of the treatment—if the blood Wassermann is positive you can expect to get some results; but if the blood Wassermann is negative and the spinal positive, then further blood treatment will not reach that case because it is not being delivered back into the blood stream, nor will medication filter through into the trouble.

The hereditary action of syphilis is a development condition, and Doctor Frazier last year at Atlantic City showed a great number of cases, the majority of which showed the development of the internal ear during foetal life.

Bilateral deafness is not always from syphilis. We had that impressed upon us forcibly in the cases shown at the Academy in Philadelphia, where it was shown that sometimes it is a tumor occupying the eighth nerve. In the majority of instances it is syphilis, but remember there are other possibilities than syphilis.

DR. FRED HASTY, Nashville: Intraspinal medication is, of course, employed in advanced cases of syphilis, but it has been rather disappointing and perhaps even disastrous in my hands. I had one man who was deaf in one ear, and with a Swift-Ellis I made him deaf in the other and he remained so. One other striking case recently was total deafness in one ear from early syphilis. The young man contracted syphilis in March, had active treatment, and became deaf in one ear in August. This occurs in about one out of ten thousand cases, according to the literature. It brings up the old question as to whether the deafness in these cases under active treatment is the result of the salvarsan in the veins or of the syphilis. At first we were warned of the

dangers of salvarsan. More recently it is evident that the syphilis attacks the nervous system at an early stage, and that it is an indication for active and forced treatment by antiluetic measures. But I must agree with the gentlemen who are conservative in regard to treatment of syphilis of the eighth nerve, especially in the beginning of the treatment. I prefer mercury and the iodides pushed to tolerance first, and salvarsan and the arsenical preparations brought on gradually.

DR. M. S. HERRON, Jackson: I want to report a case that impressed upon me the importance of taking the history. I had a case, a young man twenty-five years of age, referred to me in the past sixty days, and upon examination I found a typical luetic ulcer of the tympanic membrane. The anterior part was gone and there was erosion of the hammer handle, and in the history the patient presented a primary lesion in other parts of the body with secondaries over breast and back. I did not know this was a rare case, but I looked it up in the literature and I held him in the office three hours while I searched the literature. I was unable to find anything in regard to such a case. On close examinations with an astigmatic lens I found this ulcer showing a necrosis in the center with induration around and extending over the entire posterior part of the tympanic membrane. Treating that ulcer as a simple ulcer of the tympanic membrane would have given no result. I immediately referred this case back to the general practitioner and ordered him to give this patient salvarsan intravenously and in large doses. In four days time the ulcer had completely disappeared from the tympanic membrane. That was what I based my diagnosis on—that it was luetic ulcer of the tympanic membrane—that the ulcer disappeared within four days from no other treatment than salvarsan. I did not make a functional test of the ear. Pain was the symptom for which the patient came, and that was relieved by treatment with salvarsan. I could not find anything in the literature then, but later on in Politzer's first book I found where he had reported some cases of this kind as syphilitic ulcers of the tympanic membrane. I think it was a rare case.

DR. LOUIS LEVY (Memphis): In our work at the clinic, of course, we see quite a few negroes—the type of child with Hutchinson teeth, flat nose, etc. As Dr. Shea has said, these children do not always give a positive Wassermann of the blood, and we depend upon the spinal fluid test altogether. I must say that in these cases, as a rule, treatment is valueless because intraspinal treatment has proven a failure, especially where the history shows that the case is one of long duration.

One point I want to bring out is that we must

not forget that the eighth nerve is divided into the cochlear portion and the vestibular portion, the weaker part being the cochlear portion, and therefore we get the loss in hearing first. It has been customary with me to make the Barany test, not for diagnosis, but rather to aid in our prognosis. In other words, if we find the cochlear dead and the labyrinth also destroyed, the prognosis is grave. If we find the cochlear portion affected and the vestibular apparatus giving a fairly good reaction, our prognosis is better.

We are beginning more and more to discard salvarsan in this work and to urge mercury and the iodides, finding these cases responding better to this treatment.

DR. J. B. BLUE (closing): I have very little to say in conclusion except that I am glad the points about treatment were brought out. That was my primary object in writing the paper; to get the opinion of the gentlemen here in regard to giving salvarsan in this type of infection. I am very glad to hear what has been said. In one case of hereditary syphilis the hearing slumped considerably after salvarsan, but has picked up and his hearing is much better than when he came. The other cases have all showed improvement where the hearing was not totally gone. Where the hearing was totally gone there was no restoration of function of that ear, but where there was some hearing remaining each one showed improvement.

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## ADENO-MYOMATA\*

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T. L. MCGEHEE, M.D., F.A.C.S., MEMPHIS

**I**N selecting the topic of this paper I was moved by two considerations: First, that I might not speak to you on some trite subject, which is almost daily brought to our attention in medical journals or medical meetings; and, second, to select a pathological condition, which, while not common, is yet met with sufficient frequency to be of interest to us all, but particularly to the man who is largely engaged in the practice of surgery. This condition is of sufficient importance, particularly from the diagnostic and therapeutic standpoint, to render unnecessary, I believe, any apology for its presentation.

I will depart from the usual routine and present the case record first, approaching the subject in the same fashion as one would a case in hand:

Miss E. W.; age 33; white; unmarried. Admitted to the Baptist Hospital on April 8, 1924.

Chief Complaint: Dysmenorrhoea for seven months. A loss of 20 pounds in weight in the last five months.

History of Present Complaint: She began to menstruate at seventeen years of age and there was nothing unusual in the menstrual function for four or five years, at which time she began to suffer with dysmenorrhoea. A dilatation and

curettement was done for this without relief. Seven months ago the pain became very severe, coming on four to five days before the period and lasting through the period. The duration of the period was three days; scant; and clots were passed. About ten days was consumed each month in getting through an attack.

Family History: Father living, in good health, at seventy-two. Mother died at fifty-six, Bright's disease. One maternal aunt and one uncle died of pulmonary tuberculosis.

Physical Examination: A well-developed young woman, five feet three inches tall, weight 120 pounds; pulse seventy-eight; blood pressure 120/80; temperature normal. The head, mouth, heart and lungs all negative.

Abdomen: Negative, except some tenderness over McBurney's point and over the left ovarian region.

Pelvic Examination: The uterus retroverted, and behind and to the left was a painful, hard, nodular mass, about the size of a hen's egg.

Rectal Examination: The same hard, painful, nodular, irregular mass was palpable; but the mucous membrane of the rectum seemed not to be involved, but slipped over the nodular mass. The mass seems to be located very low in Douglas' pouch, occupying the area between the lower uterine segment and the rectum.

Proctoscopic Examination: Showed a normal mucous membrane of the rectum and recto-sigmoid.

### Laboratory Reports:

Blood: Hb. 100%; erythrocytes 4,900,000; leucocytes 7,300; S. L.'s 37; L. M.'s 7; Polys 56.  
Urine: Normal.

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\*Read before the West Tennessee Medical and Surgical Association, Jackson, May 22-23, 1924.

Pre-operative Diagnosis: Pelvic mass consisting of:

- a. Solid tumor of the ovary (?).
- b. Dermoid (?).
- c. Tubercular salpingitis.

Operation, April 9, 1924.

Anesthetic: Anoci-association.

Gross Findings: Uterus retroflexed. Attempts to elevate it showed it firmly anchored to the recto-sigmoid by an extra-peritoneal, hard, nodular mass, which seemed to involve as much of the posterior uterine surface as the wall of the recto-sigmoid. The left ovary was adherent in Douglas' pouch to this mass by delicate, easily broken up adhesions. The ovaries were normal in all respects. The tubes were normal. At this point in the operation I was at a loss as to how to proceed.

I had never before encountered just this pathological condition. In the gross it felt like a cancer of the recto-sigmoid, involving the uterus, but this conclusion was hardly in keeping with the appearance of the rectal mucosa on proctoscopic examination. Tuberculosis was considered, but the lesion did not have the appearance of nor was the location usual for tubercular processes. Adeno-carcinoma of the body was considered, but the history negated this probability; so knowing not what to do, a piece of tissue was removed from the mass, cutting it from the utero rectal angle, and the abdomen was closed. At this point it was suggested by Dr. Cullings, who was assisting me in the operation, that it was a case of adenomyoma.

The patient made an uneventful operative recovery. On the fourteenth day post-operative the patient menstruated, with the usual menstrual pain, and examination at this time showed the mass to be twice its previous size and very painful. The pathological report on the tissue was received on the eighteenth day, reporting as follows:

Pathologist's Report: Sections are composed of myomatous tissue. There are a few scattered glands lined by one layer of cells and surrounded by stroma identical with that found in uterine mucosa. In other portions the glands are in direct contact with the muscle.

Pathological Diagnosis: Adenomyomata (sub-peritoneal).

N. E. Leake.

This diagnosis was confirmed by Drs. J. M. Maury and Cullings. On April 28, Dr. Maury gave the patient 50 mg. of radium, placed partly in the cervix and partly in the uterus for twenty-four hours. On May 1 a second application of 100 mg. of radium was placed in the vagina posterior vault, making a total of 2400 mg. hours.

The patient was discharged from the hospital several days later.

This extremely interesting case served as a stimulus to a review of the literature

on this subject; and while this review is more or less incomplete, I have collected certain salient and interesting facts in this connection.

In 1891 Baraban attributed a mucosal origin to a uterine growth, which he reported. In 1894 Pilliet stated the view that the cysts and glands of adenomyoma were of mucosal origin. In 1895 Cullen reported his first case of adenomyoma, and through his writings on this subject he, more than anyone else, has demonstrated the fact that certain forms of adenomyoma of the uterus arise from an invasion of the wall of the uterus by the uterine mucosa.

What is the origin of extra uterine adenomyomas, and also uterine adenomyomas not connected with the mucosa of the uterine cavity?

Lockyer, in 1918, gave an abstract of forty-seven cases of adenomyoma, situated in the recto-genital space, which he had collected from the literature. The first case was reported by Pfaenenstiel in 1897. The growth was situated in the deep tissues of the posterior vaginal fornix near the uterus, and Pfaenenstiel regarded it as of Wolffian origin. Of the forty-seven cases, only four were reported from this country, and these by Cullen. Many theories have been given by the various authors of the origin of extra uterine adenomyoma. Some believe that they were of Wolffian origin, others that they were derived from the remnants of the Mullerian ducts, and instances where the growth was attached to the uterus, that it was originally continuous with the mucosa lining the uterine cavity, but later had become separated from it.

Another interesting theory was the "Serosal Theory of Iwanoff." This theory in brief is that "heterotopy of serosal epithelium is the probable explanation of the epithelial spaces and cysts in most of the extra uterine swellings found between the rectal and the genital tract"—that is, that under the influence of inflammation or pregnancy that endothelial inclusions change their character, and that the surrounding con-

nective tissue can be excited to hyperplasia, which causes it to assume the characteristic histological feature of the stroma of the uterine mucosa. Cullen, in 1917, in discussing the origin of adenomyoma of the recto-vaginal septum, states that "we know nothing as to the origin of these tumors, but it is certain that their glandular elements are identical with those of the mucosa of the body of the uterus."

It remained for John A. Samson to furnish the most plausible explanation of the origin of these tumors, which he did in the paper presented to the Harvard Medical Society, in February, 1922, entitled "Ovarian Hematomus of Endometrial Type (perforated hemorrhagic cysts of the ovary) and Implantation Adenomas of Endometrial Type." In this paper he advanced the "Implantation Theory." This was based on the study of forty cases of perforated ovarian hematomas of the endometrial type, with implantation of adenoma of the endometrial type in the pelvis in situations where material escaping from the perforation of the hematoma would be likely to lodge. On this theory it would be expected that the portion of the intestinal tract normally found in the pelvis would often be the seat of these implantations. In 1921 Samson reported twelve such cases, in which portions of the intestinal tract were involved in this type of growth; of these twelve cases, the rectum and the sigmoid, including the epiploic appendages and mesentery of the latter, were involved in eight, the appendix in four, and small intestines in two. It is interesting to note that in the eight instances in which the rectum and sigmoid were involved the ovarian hematoma was situated in the left ovary in six; while in four instances of implantation in the appendix it was situated in the right ovary in four. An ovarian hematoma with evidence of previous perforation was found in ten cases.

A review of the literature of extra-uterine adenomyomas shows that they have been found involving nearly all the structures in the pelvis and even in the groin,

umbilicus and anterior abdominal wall. The most interesting ones clinically are those invading the sigmoid, rectum, and also those situated between the rectum and the vagina. The latter are known as adenomyoma of the recto-vaginal septum. These growths may clinically simulate carcinoma of the sigmoid and rectum. Adenoma is sometimes found invading the lymph vessels from these implantations and metastases may occur from this source and explain the origin of similar growths found in the groin.

As to the source of these ovarian hematomas, time does not permit, neither does the scope of this paper contemplate the discussion of a large amount of evidence submitted on this question. Suffice it to say that the epithelium of endometrial type reaches the ovary either by developmental origin or is acquired during adult life of the individual.

What is of most interest to us, as practical men, is the consideration of the clinical features of adenomyomas, and their treatment. As my experience is limited to a lone case here reported, I will summarize for our benefit those clinical features which are regarded as significant by those who have had a wider experience with the subject.

These vary with the pathological condition present. In some cases hematoma in the ovary is the most evident condition present; in others the peritoneal implantation and the invasion of the underlying organ or tissue is of greater importance; and the lesion in the ovary may be small and insignificant or occasionally absent, at least not demonstrable. The implantations, in many ways, resemble the implantations of ovarian carcinoma. Fortunately they are not as invasive; they grow more slowly, and their distribution is not so great. They differ from carcinoma in another interesting feature, that may combine function with that of invasion—that is, they may take part in menstruation.

All pelvic adenomas of endometrial type are said to have certain clinical features

in common. They usually manifest themselves in women between thirty years of age and the menopause. There is often a history of sterility in married women, painful menstruation of the acquired variety, or increasing in severity, is quite a common symptom. Pain may also arise from the adhesions independent of menstruation. When the growth in any way encroaches upon the lumen of the intestine, the symptoms arising from this may occur, and these may be more marked, or present only during the menstrual period.

Physical signs vary greatly. If the ovarian hematoma is large, it may be readily detected, and the condition may simulate an adherent or malignant ovarian cyst. If smaller, it may on palpation resemble an adherent ovary associated with salpingitis. The palpatory findings in the cul-de-sac when present furnish the most characteristic signs. The uterus is often retroverted or retroflexed and adherent. The implantations in the cul-de-sac may be slight or extensive, smooth or nodular, in the midline or lateral, and often involving the utero-sacral ligaments, and are frequently tender on palpation. Extensive cases may simulate carcinoma in the cul-de-sac, or at other times cancer of the rectum or sigmoid.

The treatment of this condition is an

unsettled problem. In many instances the adenomas may cease to grow and actually atrophy after the menopause. At the present time the consensus of opinion seems to be that on finding this condition at operation, not to disturb the implantations, except as they may be easily removed for histological study, but to deal with the pelvic organs as their condition indicates. In cases of intestinal involvement, resection is very rarely required, because the implantations will usually, possibly always, atrophy after all ovarian tissue is removed. Radium probably offers the most satisfactory solution of the problem—that or oophorectomy. Certainly it is a fact that upon removal of the ovaries or upon their destruction by radium the adenomyomas disappear.

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# THE JOURNAL

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Office of Publication, 420 Jackson Bldg., Nashville, Tenn.

J. F. GALLAGHER, M.D. ----- Editor  
R. C. DERIVAUX, M.D. ----- Associate Editor

AUGUST, 1924

## COMMITTEES

In the July issue of the JOURNAL appeared a list of the officers and committees of the Association as well as a list of the membership. As soon as this office was notified of the personnel of the committees, a letter was sent each member notifying him of his appointment. Our President, Dr. Smythe, gave a great deal of thought and deliberation in making the assignments to the various committees, and he has succeeded in no small measure in selecting a good group in each instance. In discussing some of the appointments Dr. Smythe said, in effect, he wanted to select men who would work for the good of the profession, and not simply to compliment a friend.

The best work in the past has been done by the Committee on Public Health and Legislation and the Committee on Cancer, and there is no reason to believe that this good work will not continue. Much could be accomplished by the other committees if they would organize and do something. Every assistance possible will be rendered these committees, not only by this office but by all the duly elected officers of the Association. The chairmen of the various committees are urged to get into communication with the members of their committee and organize for work. Our President appointed you because he thought you would work. Do not disappoint him.

## YOUR PAPER

From time to time a member of the Association will write this office, with an air of righteous indignation, inquiring why the paper he has written and sent in has not

been published in the JOURNAL. The society before which it was read, perhaps, voted that it be published in the State journal. But it does not appear, and the author wants to know why. There are several good reasons why a paper is not published; and if the irate and disappointed author will reflect on these, he will probably divine the reason. First, the subject of the paper may not be, in the humble judgment of the editor, such as to warrant publication; or, what is more frequently the case, the subject is handled in such a manner as to be of even less value than that of an average text book on the same subject. Second, the manuscript is so poorly prepared that it does not admit of editing. In many instances the whole paper would have to be re-written before the printer could use it at all. With a staff of ONE in this office re-writing is manifestly impossible. If authors would remember to typewrite on one side of the paper and double space their manuscripts, it would greatly enhance the probability of their article being printed.

It should not be inferred from the foregoing that this office is not desirous of receiving papers read before the county and regional societies. The very opposite is the case. And this is written not to discourage the submission of manuscripts for publication, but to remind our members to send in more and better papers.

## DEATHS

Dr. W. T. Porph, one of Humphreys County's oldest citizens, died in Waverly July 29, aged 84.

Dr. John W. McCarley died at his home in Memphis August 10. Dr. McCarley practiced in Ripley for twenty-three years. He retired from practice in 1901 and moved to Memphis.

**NEWS NOTES AND COMMENT**

Dr. E. H. Adkins, formerly of Chattanooga, has removed to Miami, Fla.

Dr. George R. McSwain, of Paris, spent the first two weeks of August at the Crile Clinic in Cleveland.

John D. Rockefeller gives away dimes on his birthday, but his Institute's professors get trips to Europe.

Dr. Olin West, Secretary of the A. M. A., spent his vacation on a camping trip near Nashville in August.

Dr. C. P. Fox, of Greeneville, has recently installed a complete physiotherapy and hydrotherapy plant in his hospital.

Dr. C. W. Friberg announces the opening of his office for the practice of obstetrics and gynecology in Johnson City.

Dr. J. F. Adams, of Bradyville, has formed a partnership with Dr. T. M. Smoot and will move to Woodbury. They intend to open a private sanitarium there.

Dr. G. C. Grimes, of Aspen Hill, writes that he is desirous of changing his location. If any one knows of a suitable place, Dr. Grimes would be glad to hear from them.

Alienists, psychiatrists and expert witnesses do the profession more harm than all the other members put together. This group usually swear the way they are paid to swear—and invent a little fiction to boot.

Dr. S. B. Duggan, of the Fort Sanders Hospital, has resigned and accepted a place as Assistant Physician at the Eastern State Hospital. Dr. F. E. Connell, of Windom, Texas, has succeeded Dr. Duggan at the Fort Sanders Hospital.

Miss Rosa Van Vort who has been connected with the Memorial, Stuart and St.

Elizabeth Hospitals of Richmond, Va., for the past twenty-two years, has been appointed Superintendent of the Knoxville General Hospital.

Typhoid fever is unusually prevalent in many districts of the state. Smallpox epidemics have just been suppressed in several communities in East Tennessee. It seems almost impossible for the people to understand that these diseases are preventable.

Application for a charter of the Baptist Hospital of Nashville has been made. The plant of the Woman's Hospital of Nashville was turned over to the Baptist Board on condition that a \$500,000.00 plant be erected within five years and that the new hospital be a memorial to the late Dr. M. C. McGannon, founder of the Woman's Hospital.

Dr. J. Mansfield Bailey was married to Miss Ethel Ray Stoermer, of Owensboro, Ky., July 10, in Richmond, Va. Mrs. Bailey is a graduate of the training school for nurses of the Baptist Memorial Hospital, Memphis, where Dr. Bailey spent his internship. They have been appointed medical missionaries by the Mission Board of the Southern Baptist Convention, and after a visit to Dr. Bailey's family in Nashville will sail on September 5 for Wuchow, South China.

In Rhea County there is a quack—a self-styled "Indian Doctor"—advertising to cure cancer and all the other ills that man is heir to. He was indicted by the grand jury for practicing without a license. At trial he was released when he promised to leave the community. But did he do it? He interested one of the members of the Rhea County Medical Society, and for a consideration this physician has effected an affiliation with the "Indian Doctor" and is boldly advertising it in the Chattanooga papers. Cure guaranteed, of course. Another birth-right sold for a mess of pottage.

The following letter, which has been received in the office of the Secretary, is self-explanatory. Any member of the State Society who has the information desired is urged to communicate with Dr. Thompson:

Chicago, Ill., July 15, 1924.—Secretary State Medical Society, Nashville, Tenn.  
Dear Doctor: I am compiling a book on the subject, "The Doctor in Other Fields," and I wish to make it as representative of those of our American doctors who have attained fame in fields other than that of medicine as I possibly can. Hence this letter.

I would appreciate it very much if you would canvass your State Medical Society for men who would be entitled to notice in such a book, and secure the pictures of such men, together with a history of their lives and accomplishments, and forward the same to me at your earliest convenience.

Thanking you in advance for the courtesy of an early response to this appeal and urging this action upon you as a duty to the profession, I am,

Cordially and fraternally yours,

W. MOORE THOMPSON, M.D.  
1234 Marshall Field Annex.

The Inter-State Post Graduate Assembly, directed by the Tri-State District Medical Association, extends a hearty invitation to the physicians of America who are in good standing in their state or provincial societies, to attend the annual assembly, which is to be held at Milwaukee, Wis., October 27, 28, 29, 30 and 31, five full days of post graduate work.

Among the eminent members of the profession and citizens who have accepted places on the program are the following:

Dr. Nicholas Murray Butler, President of Columbia University, New York, N. Y.

Sir Arthur William Currie, President of McGill University, Faculty of Medicine, Montreal, Canada.

Merritt W. Ireland, Surgeon-General of United States Army, Washington, D. C.

Monsieur J. Jusserand, French Ambassador to United States, Washington, D. C.

Edward E. Stitt, Surgeon-General of United States Navy, Washington, D. C.

Professor Theodore Tuffier, Professor of Surgery, Faculty of Medicine, Paris, France.

Dr. John V. Barrow, Los Angeles, Cal.

Dr. W. F. Braasch, Mayo Clinic, Rochester, Minn.

Dr. George E. Brewer, Emeritus Professor of Surgery, Columbia University, College of Physicians and Surgeons, New York, N. Y.

Dr. Alan Brown, Professor of Pediatrics, University of Toronto, Faculty of Medicine, Toronto, Canada.

Dr. Ralph C. Brown, Assistant Professor of Medicine, Rush Medical College, Chicago, Ill.

Dr. C. Macfie Campbell, Professor of Psychiatry, Harvard University, School of Medicine, Cambridge, Mass.

Dr. Walter T. Connell, Professor of Medicine, Queen's University, Faculty of Medicine, Kingston, Canada.

Dr. John F. Cowan, Professor of Surgery, Stanford University, School of Medicine, San Francisco, Cal.

Dr. George W. Crile, Professor of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

Dr. Samuel J. Crowe, Clinical Professor of Laryngology, Johns Hopkins University, School of Medicine, Baltimore, Md.

Dr. LeRoy Crummer, Professor of Medicine, University of Nebraska, College of Medicine, Omaha, Neb.

Dr. Walter E. Dandy, Associate Professor of Surgery, Johns Hopkins University, School of Medicine, Baltimore, Md.

Dr. William Darrach, Dean and Associate Professor of Surgery, Columbia University, College of Physicians and Surgeons, New York, N. Y.

Dr. Vernon C. David, Assistant Professor of Surgery, Rush Medical College, Chicago, Ill.

Dr. David J. Davis, Professor of Pathology and

Bacteriology, University of Illinois, School of Medicine, Chicago, Ill.

Dr. John B. Deaver, Professor of Surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Dr. Laurence D. DeBuys, Professor of Pediatrics, Tulane University, School of Medicine, New Orleans, La.

Dr. George F. Dick, Assistant Professor of Medicine, Rush Medical College, Chicago, Ill.

Dr. Charles A. Elliott, Professor of Medicine, Northwestern University, School of Medicine, Chicago, Ill.

Dr. Leonard W. Ely, Professor of Surgery, Stanford University, School of Medicine, San Francisco, Cal.

Dr. Joseph Evans, Professor of Medicine, University of Wisconsin, School of Medicine, Madison, Wis.

Dr. A. MacKenzie Forbes, Clinical Professor of Orthopedics, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. William Goldie, Associate Professor of Medicine, University of Toronto, Faculty of Medicine, Toronto, Canada.

Dr. Marvin L. Graves, Professor of Medicine, University of Texas, School of Medicine, Galveston, Texas.

Sir Henry Gray, Royal Victoria Hospital, Montreal, Canada.

Dr. Don M. Griswold, Professor and Head of Department of Preventive Medicine and Hygiene, State University of Iowa, Iowa City, Iowa.

Dr. Garfield M. Hackler, Professor of Surgery, Baylor University, School of Medicine, Dallas, Texas.

Dr. John A. Hartwell, Associate Professor of Surgery and Clinical Surgery, Cornell University, Medical College, New York, N. Y.

Dr. Carl A. Hedbloom, Professor of Surgery, University of Wisconsin, School of Medicine, Madison, Wis.

Dr. William B. Hendry, Professor of Obstetrics and Gynecology, University of Toronto, Faculty of Medicine, Toronto, Canada.

Dr. Russell D. Herrold, McCormick Institute for Infectious Diseases, Chicago, Ill.

Dr. Julius H. Hess, Professor of Pediatrics, University of Illinois, School of Medicine, Chicago, Ill.

Dr. Russell A. Hibbs, Professor of Orthopedic Surgery, Columbia University, College of Physicians and Surgeons, New York, N. Y.

Dr. Frederick J. Kalteyer, Associate Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.

Dr. Allen B. Kanavel, Professor of Surgery, Northwestern University, School of Medicine, Chicago, Ill.

Dr. Ralph A. Kinsella, Associate Professor of Medicine, University of St. Louis, School of Medicine, St. Louis, Mo.

Dr. Francis H. Lahey, Professor of Clinical

Surgery, Harvard University, School of Medicine, Boston, Mass.

Dr. Dean Lewis, Professor of Surgery, Rush Medical College, Chicago, Ill.

Dr. LeRoy Long, Dean and Professor of Surgery, University of Oklahoma, School of Medicine, Oklahoma City, Okla.

Dr. William E. Lower, Professor of Urology, Western Reserve University, School of Medicine, Cleveland, Ohio.

Dr. Charles B. Lyman, Professor of Clinical Surgery, University of Colorado, School of Medicine, Denver, Colo.

Dr. N. J. MacLean, Associate Professor of Surgery, University of Manitoba, Faculty of Medicine, Winnipeg, Canada.

Dr. Ralph H. Major, Professor and Head of Department of Medicine, University of Kansas, School of Medicine, Rossdale, Kans.

Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minn.

Dr. William J. Mayo, Mayo Clinic, Rochester, Minn.

Dr. Edward Miloslavich, Director of Department of Pathology and Bacteriology, Marquette University, School of Medicine, Milwaukee, Wis.

Dr. Roger S. Morris, Professor of Medicine, University of Cincinnati, School of Medicine, Cincinnati, Ohio.

Dr. Bernard H. Nichols, Department of Roentgenology, Cleveland Clinic, Cleveland, Ohio.

Dr. Walter L. Niles, Dean and Professor of Clinical Medicine, Cornell University, School of Medicine, New York, N. Y.

Dr. William F. Petersen, Associate Professor of Pathology and Bacteriology, University of Illinois, School of Medicine, Chicago, Ill.

Dr. Dallas B. Phemister, Assistant Professor of Surgery, Rush Medical College, Chicago, Ill.

Dr. Harry M. Richter, Professor of Surgery, Northwestern University, School of Medicine, Chicago, Ill.

Dr. Stanley P. Reimann, Director of Laboratories, Lankenau Hospital, Philadelphia, Pa.

Dr. David Riesman, Professor of Clinical Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pa.

Dr. Milton J. Rosenau, Professor of Preventive Medicine and Hygiene, Harvard University, School of Medicine, Boston, Mass.

Dr. E. C. Rosenow, Mayo Clinic, Rochester, Minn.

Dr. G. W. Stevens, Milwaukee, Wis.

Dr. Wallace Irving Terry, Professor of Surgery, University of California, School of Medicine, San Francisco, Cal.

Dr. John H. J. Upham, Professor and Head of Department of Medicine, University of Ohio, School of Medicine, Columbus, Ohio.

Dr. George Gray Ward, Jr., Professor of Obstetrics and Gynecology, Cornell University, School of Medicine, New York, N. Y.

Dr. Louis M. Warfield, Professor of Internal Medicine, University of Michigan, School of Medicine, Ann Arbor, Mich.

Dr. George Weaver, McCormick Institute for Infectious Diseases, Chicago, Ill.

Dr. Charles J. White, Professor of Dermatology, Harvard University, School of Medicine, Boston, Mass.

Dr. Charles S. Williamson, Professor of Medicine, University of Illinois, School of Medicine, Chicago, Ill.

Dr. Milton C. Winternitz, Dean of Yale University, School of Medicine, Professor of Pathology and Bacteriology, New Haven, Conn.

Dr. John A. Witherspoon, Professor of Medicine, Vanderbilt University, Medical Department, Nashville, Tenn.

Dr. John L. Yates, Milwaukee, Wis.

Dr. Hugh H. Young, Clinical Professor of Urology, Johns Hopkins University, Medical Department, Baltimore, Md.

Dr. Abraham Zingher, Assistant Professor of Hygiene, University and Bellevue Hospital, Medical College, New York, N. Y.

#### Invitation to American Physicians.

This association is supervising an Inter-State Post Graduate Clinic Tour to Canada, British Isles and France to start May 18, 1925. Leading teachers and clinicians of Canada and Europe will arrange and conduct clinics and demonstrations in the following clinic cities:

Toronto and Montreal, Canada; London, Liverpool, Leeds, Manchester and Newcastle, England; Edinburgh and Glasgow, Scotland; Dublin and Belfast, Ireland; Paris, Lyon and Strasburg, France.

Besides the main tour, special tours to practically all the leading centers of Europe will be arranged. Sight-seeing trips to all places of interest in the countries visited will be included in the regular tour.

Cost of tour, including first-class hotels, board, steamship, clinic arrangements and all ordinary traveling expenses, under \$1,000.00.

The tour is open to physicians in good standing in their state societies, their families and friends who are not physicians.

For information, write the Managing Director, William B. Peck, Freeport, Ill.

## BOOKS RECEIVED

**LIFE INSURANCE EXAMINATION.** Edited by Frank W. Foxworthy, Ph.B., M.D., formerly chairman Medical Section, American Life Convention, President of the American Association of Medical Examiners, Chief Surgeon Indiana National Guard, at present on staff of Methodist Episcopal and City Hospitals. Associate Editor "Medical Insurance." For many years a medical director, a medical referee, and a medical examiner. Pp. 738, with 156 illustrations. Cloth. Price, \$9.00. St. Louis: C. V. Mosby Company. 1924.

For a number of years there has been a crying need for a practical work on life insurance examining. A few insurance companies have attempted to supply this need by sending their examiners bulletins and letters discussing the bearing of recent medical advances on life insurance. Dr. Foxworthy has collected articles by forty-nine leaders in the medical and insurance fields, including such men as Dr. Oscar H. Rogers, Dr. J. Allen Patton, Dr. Francis M. Pottenger and Dr. George W. Crile. A great variety of subjects are covered: history of life insurance examination, organization of medical departments, examination of the different systems, relation of certain diseases to insurance, blood pressure, urinalysis, health conservation, legal aspect of life insurance examinations, and many others. The chapters on the examination of the applicant are not full and are presented in much better form in the standard works on physical examination. Blood tests, repeated sputum examinations, and x-ray pictures are of great value in making a diagnosis, but the insurance company will not pay for it. The chapters on blood pressure and urine findings are very instructive. This book is much too full to serve the purpose for which it was intended. The average medical examiner is often careless in his work and needs instruction, but a concise manual would be more often consulted by the busy practitioner who does insurance examining as a side line. S. P. B.

**ABT'S PEDIATRICS.** By 150 specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. In eight octavo volumes. Now ready, Vol. 3, containing 1,051 pages and 223 illustrations. \$10.00 net. W. B. Saunders Co., Philadelphia.

Abt's Pediatrics is being issued a volume at a time. The third volume deals with the digestive and respiratory diseases of infancy and early life. The work is in monographic form and the various sections have been written by men well known in the fields they discuss.

In any system of medicine some repetition is

unavoidable. However, this is compensated by the wealth of material that is found in a system such as this, that would not be available except through very extensive journal reading. Subjects barely mentioned in the ordinary text-book on pediatrics are here described fully. Thus the physiology and bacteriology of the gastro-intestinal tract and respiratory system, the "new system of nutrition," milk idiosyncrasy, orthodontia, bronchoscopy, pollinosis and sinusitis are treated at length.

That portion of the volume devoted to the surgery of the gastro-intestinal tract in children is worthy of especial commendation. The subjects of pyloric stenosis, abdominal contusions, peritonitis, appendicitis, intestinal obstruction and hernia are splendidly handled.

The nutritional diseases of infancy are discussed on a basis of Finkelstein's classification. The subject of breast feeding was well covered in another volume, but its importance justifies some repetition here. There are special articles on celiac disease and gastro-intestinal disturbances in older children.

Too little attention is devoted to the treatment of pneumonia. There is some repetition on foreign bodies in the lungs. The third volume is well illustrated, especially the subjects of hare-lip, cleft-palate and malocclusions, and maintains the high standard predicted for this system of pediatrics with the issuing of Vol. 1 and Vol. 2.

R. H. P.

**THE HUMAN TESTIS.** Its Gross Anatomy, Histology, Physiology, Pathology, with Particular Reference to its Endocrinology, Aberrations of Function and Correlation to Other Endocrines, as well as the Treatment of Diseases of the Testis and Studies in Testicular Transplantation and the Effects of the Testicular Secretion on the Organism. By Max Thorek, M.D., Surgeon-in-Chief, American Hospital. Cloth. Price, \$7.50. Pp. 548, with 308 illustrations. Philadelphia: J. B. Lippincott Co. 1924.

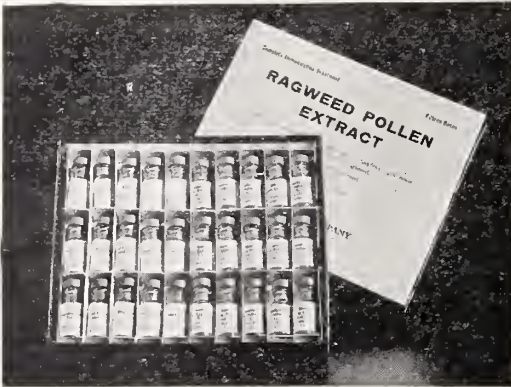
Dr. Thorek has failed completely to give us a book which might be used as a clinical guide in the treatment of diseases of the testicle. The book treats very exhaustively of the internal secretion of the testis, especially of its effect on masculinity. He devotes entirely too much space to rejuvenation experiments both by himself and others, which after a time become very tiresome reading.

The book shows very conclusively that Dr. Thorek has exhausted considerable effort in the compilation, but as above stated he has failed to produce a practical treatise of value to the average urologist or the practitioner. The volume will no doubt continue for a long time to represent the only available English edition in which such an exhaustive compilation of the literature may be found. P. B.

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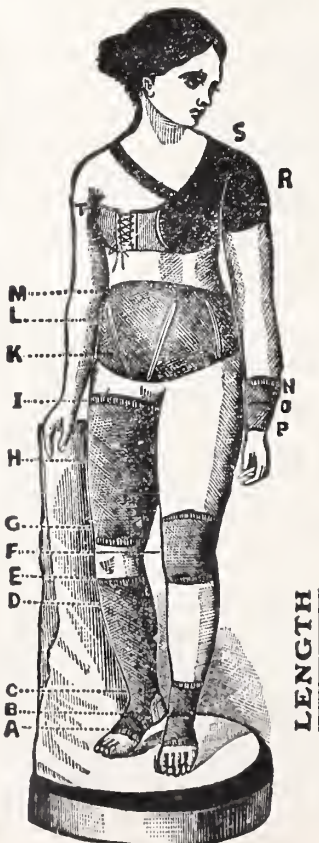
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# **THE JOURNAL**

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### **STERILITY IN THE FEMALE WITH REPORT OF CASES OF STERILITY DEPENDENT UPON DIFFERENT CAUSES. SUCCESSFUL TREATMENT\***

FRANK D. SMYTHE, M.D., F.A.C.S., Memphis

**I** WILL not burden you with a resume of the literature on the subject of sterility in the female. The condition is very common, however, and is one of the most important with which the physician and gynecologist has to deal.

Excluding the failure of the development of the reproductive organs, embryonal defect, a woman is many times unjustly charged with the responsibility and cause of the fruitless wedlock. More than half the cases of sterility are directly and indirectly due to the male member of the family—azoospermism, oligospermia, soft, small and functionless testicles, due to other causes than the gonococcus. Infections conveyed by the husband to the healthy wife ascending and involving the tubes and ovaries, creating a condition which renders the entrance of the ovum into the tube, or the passage of the ovum through the tube into the uterus impossible, thus preventing the necessary head-on collision with the spermatazoa—hence no fecundation.

Before instituting or outlining a method of treatment for sterility of the female, in justice to the woman and in the interest of

science, it is essential that the husband be excluded as a factor in the trouble for which the woman is seeking relief, and in most instances considering herself the responsible party. The method of determining whether or not he is a factor is well known and needs no comment from the speaker.

#### **DIAGNOSIS AND TREATMENT**

(a) Obviously there is no relief for the condition dependent upon the absence or of gross imperfection in the development of the reproductive organs.

(b) Absence of endocrine balance, imperfect functioning of the pituitary, thyroid and the ovaries, and as result of obesity, a myxodematous state and an arrest of the development of the uterus, tubes and ovaries, often amenable to treatment.

(c) Any obstacle preventing the passage of the spermatazoa upward or the ovum outward, regardless of where located, between the ostium vaginae and the ovary, is capable of, and does, by preventing the union of the essential elements, result in sterility.

Obviously, the first, most important, and the essential duty of the gynecologist is to ascertain the exact location of the lesion, and the nature of the lesion, in order to

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

prognosticate with any degree of accuracy the outcome of treatment in a given case, and the nature of the treatment, operation, or operations, that will have to be performed in order to overcome the defect, and thereby make conception possible.

In the normal woman the cause of the trouble will be found, in the vast majority of cases, located in the tubes or ovaries, generally the tubes. However, the tubes might have undergone involution and be capable of functioning, while the ovaries, as result of previous inflammation, may be abnormally located to such an extent that the ovum if discharged would be destroyed before it could find the way to the gate of the tube; or the ovary, as result of chronic inflammation, might not permit the rupture and escape of the ovum—hence sterility.

#### NON-OPERATIVE DETERMINATION OF TUBAL PATENCY

The method of I. C. Rubin—intrauterine inflation with oxygen—is a valuable addition to our diagnostic resources. Never having employed the method, I am not prepared to speak of its value further than to say that I am favorably impressed with the method and would not hesitate to employ it as a diagnostic measure in suitable cases. A note of warning, however, should be sounded concerning its routine use for the obvious reason that acute and subacute infections of the tubes might be followed with a troublesome or fatal peritonitis; the air forcing the infectious material into the free cavity. Hirst reports two fatalities following employment of the method for therapeutic purposes.

I have selected two cases out of all the number of cases treated and operated upon for the relief of sterility in the female. As the two cases selected emphasize many points of interest concerning their respective types, I will content myself with a brief report of the cases, illustrating some of the points of interest with lantern slides.

When should a woman be classified as sterile? When measures of prevention are not resorted to, more than half the cases

become pregnant within three months after marriage. A large number of those remaining become pregnant within the first six months. A patient having gone for a year without becoming pregnant, in the absence of measures being resorted to for preventing the same, may with propriety be classed as a rule as a sterile patient. Exceptions to the rule.

Case No. 1. Patient, female, white, age 30. Has been married for three years. Menstruates regularly and normally as to time, duration and quantity. Has never been pregnant, nor has she at any time resorted to measures for the prevention of conception.

Physical examination reveals a healthy woman in every particular, and she only sought relief for sterility. Examination of external genitals revealed them normal. Vagina normal. Uterus, normal in size and in position. Movements slightly restricted. Tubes palpable and but little if any enlargement suspected. Ovaries on both sides palpable but apparently not movable. Tenderness upon pressure but not markedly so. External os normal. Cervical canal patent—passage of sound accomplished without difficulty and without much pain. No abnormal or excessive discharge.

Before proceeding further a specimen of semen was obtained from the husband for examination. It was found to be filled with healthy spermatozoa.

Diagnosis—Sterility. Cause salpingitis with or without oophoritis, bilateral, obstructing the tubes.

Operation was advised with the hope and belief that the cause responsible for the sterility might be removed and that conception would occur. The patient was in perfect physical condition and was in the hands of an experienced surgeon, and it was considered that she was being subjected to but slight if any risk by having the operation performed. Certainly it was decided that the risk was not sufficiently great to contraindicate its performance.

The operation was performed November 2, 1920. Findings at operation: The uterus was normal in size. The tubes on both sides resembled to some extent foetal tubes. The ostium abdominale of the left tube was closed and the calibre of the tube for some distance, one and a half inches from the extremity, was obliterated. The ovaries were normal in size, though mal posed and there were numerous restrictions as result of adhesions. The right tube was normal in length, though hard and nodular. The ovary on the right side was slightly smaller than normal and contained a few small follicular cysts. It was impossible for us to effect dilatation of the tube. The smallest probe could not be made to enter it.

The right tube was removed. The interstitial portion of the tube was found to be patulous, and we succeeded in passing a small probe through it into the uterine cavity. The right tube was drawn up, as you will observe during the showing of the slides upon the screen, and attached by sutures to the right cornu of the uterus. The left tube was amputated one and a half inches from the osteum abdominale. A small probe was introduced into the calibre of the tube, which was quite small but not entirely obliterated. With patience and care we succeeded in passing the probe into the uterine cavity on that side. Several probes of different sizes were introduced for the purpose of dilating the constricted tube. The mucous membrane of the tube, having been slit, was sutured to the serous coat of the tube, as one would turn a cuff up. The left ovary was brought into contact with the amputated end of the tube and there anchored. The abdomen was closed in the usual way and nothing unusual developed during the post-operative progress of the patient and she left the hospital in fifteen days comfortable and well.

The patient menstruated regularly until May, 1921, at which time she called to see me, having missed a period. The second call was made on August 9, 1921, the patient submitting a history of normal pregnancy. Moderate nausea, vomiting at times, with the usual breast changes present incident to pregnancy. Examination revealed the uterus enlarged—size of a twelve weeks' pregnant uterus. She returned to Memphis, February 1, 1922, in accordance with my advice. Date of expected confinement according to the usual method of estimating same, was February 14, 1922. Her general health was good. Uterus normal. Pelvic measurements normal. On February 9, five days before expected date of confinement, labor set in. The first symptoms experienced was the patient felt a gush of amniotic fluid. She was seen by myself shortly thereafter, and conveyed to the hospital for the purpose of being delivered. Normal delivery was expected to occur in due time. The foetal heart sounds were 144 upon admission to the hospital. Labor progressed normal during the day. Six hours after onset of labor the foetal heart sounds were 132 and not so distinct I did not think as they were at former examinations. At 4 o'clock in the afternoon the foetal pulse was 126 and not so audible as before. At 6 o'clock the foetal pulse was 120 and growing more feeble. At 8 o'clock the foetal pulse was 118 and almost inaudible. The patient's general condition was good, the pains were regular and strong, though but little if any progress was being made. The cervix uteri was soft and dilatable, but was not dilated.

The situation was explained to the patient and her husband, and I was of the opinion and so stated to them, that I did not believe she would

be delivered of a living foetus if we permitted the labor to continue much longer, because of the obvious weakening of the heart's action of the foetus. We were much concerned about the issue in this case and entertained the hope of delivering a living child and one that would continue to live. So the patient was administered gas oxygen and with the employment of local anesthesia a Cesarean was performed.

The cord was found entwined twice around the neck of the child. The child was cyanosed; pulse very slow and very weak. The placenta was normally attached and there was no evidence of disease of the placenta. The foetus was extracted without delay and turned over to an assistant. The child was worked with for twenty-five minutes before it showed signs of being able to exist without artificial aid. The patient made a prompt recovery and left the hospital in less than three weeks after the operation, carrying with her a well developed and promising girl baby.

In taking the history of the case, a careful and painstaking history of the patient from infancy to the present time was obtained. The only feature of interest in the past history was that during her childhood she had vulvo-vaginitis, which persisted for a long time and was a very stubborn and aggravated case. Examination was not made of the discharge, but the physician in charge of the case was of the opinion that the infant had been infected by its nurse. In all probability the disease extended upward and involved the tubes, producing the pathology that resulted in the destruction of one tube and closure of the osteum abdominale, closing the sterile end of the tube, which prevented the passage of the ovum into the uterus. Sterility.

Case 2. Mrs. W. H., resident of Memphis. Occupation, housewife, age 36, married fourteen years. She consulted me March 27, 1922, seeking relief for sterility and a high degree of nervousness.

Physical examination revealed a woman low in stature, of rough skin, with a tendency to myxedema. The thyroid gland was not palpable.

Menstrual history: She did not remember having menstruated but a very few times since the onset of menstruation occurred, at the age of 17. She had never been pregnant, nor had she ever resorted to measures for the prevention of conception.

Pelvic examination: External genitals normal in appearance. Vagina normal, and there was a slight discharge; microscopic examination of which revealed numerous colon bacilli. The cervix was high up and very small and was slightly eroded, moderate endocervicitis was present. It was with great difficulty that the body of the uterus could be palpated, and the tubes and ovaries could not be detected by examination. The uterus was very small and was about one and a half inches long,

that is from the external os to the fundus uteri. Diagnosis: Sterility. Pubescent uterus. Myxodema.

She was advised as to the nature of her trouble and of the unpromising outlook for improvement, but her desire to become a mother was sufficiently strong to justify me in advising her to subject herself to treatment over a protracted period of time. She replied that she had undergone treatment of physicians and gynecologists for about thirteen years and that nothing had been accomplished thus far and she had been told her case was entirely hopeless and it was a waste of time to subject herself to treatment for sterility dependent upon causes such as were responsible for her sterility. She consented and began the treatment and persisted in the treatment with enthusiasm and with hope of success from the outset.

Briefly the treatment consisted of the administration of pituitary extracts, ten grains, thyroid extract one grain, and ovarian extract ten grains three times a day. In addition she was placed upon a diet for the obesity that obtained, and applications to the endometrium and cervical canal was made of the tincture of iodine at intervals of ten days. Amenorrhoea persisted. The patient and myself persisted, varying the treatment only with the variation in the amount of the extract administered. In eight months after the treatment was begun we found the uterus as shown in picture No. 3, which is normal in size, normal in position; the tubes and ovaries scarcely palpable, but palpable. During the month of January the patient experienced a severe uterine hemorrhage. I was unable to ascertain the cause of the hemorrhage, but satisfied myself that it was not the result of an abortion.

During my absence from the city my son and associate in practice examined the patient, June 1, 1923, and he was of the opinion that she was pregnant at that time, but being unfamiliar with the previous history of the case he did not make a positive diagnosis. On June 1, 1923, the patient complained of pain in the lower abdomen. Nausea, especially in the morning. Tenderness of both breasts, with increase in the discoloration of the areole tissue. Tubercle of Montgomery prominent. Digital examination showed cervix softer than normal. Uterus somewhat larger than normal, movable and soft. Diagnosis: Probably pregnant, early.

Upon my return to the city, a month thereafter, examination revealed that the patient was pregnant. Measurements of the pelvis showed that in all directions it was smaller than normal. Such a pelvis as one could draw through with high forceps and much laceration of soft tissue, a dead baby, or a baby in such a condition that it would have great difficulty in surviving the trauma inflicted during delivery. It was never

our purpose to permit her to enter into active labor with the hope of delivering via naturalis.

She was sent to the hospital February 3, 1924, and operated upon February 5, 1924. The Sanger operation was performed and an eight-pound male child was extracted. The ovaries and tubes were found to be normal in size and position. The patient made a prompt and complete recovery and left the hospital in seventeen days after the Caesarean section had been performed.

My experience with the two cases reported is not different from many similar cases that I have had during the years in which I have been engaged in the practice of my profession. Many cases of sterility are sterile as the result of a cause which is remediable, and it is up to us as physicians and gynecologists to see that nothing is left undone that can be done to render conception possible in these cases. It is a duty that we owe primarily to our patient, as no greater calamity can befall a woman who is married to a man she loves than to realize it is impossible for her to become a mother. And we owe a duty to the State also, and we should not hesitate to discharge that duty, or be lukewarm in the discharge of that duty.

You will find nothing new—no discoveries in these cases, but you will be impressed with the importance of the fact that we were rewarded with success because of our industry, and because of our intense interest in promoting the welfare and happiness of our patients to the fullest extent possible. We are also reminded that success or failure attend our efforts according to the industry displayed upon our part and of our interest in our patients. And we are also reminded of the personal element, which is not appreciated, or is underestimated by the physician or surgeon who relies upon the technician and laboratory to make his diagnosis for him, and map out a course of treatment for the case in hand. The bedside is the place for a diagnosis to be made, and the physician who is going to treat the case is the man who should make the diagnosis, calling upon the technician and the laboratory when in his opinion they may prove of assistance to him in

clearing up a case in which some doubt in his mind exists, after having exhausted his resources without being able to solve the problem. Patients as a rule do not take kindly to the practice of being passed through the hands of so many physicians when they are seeking relief at the hands of their physician for a physical ailment. And that practice has been in vogue to such an extent in some communities that the public is beginning to feel that the real physician is no longer in vogue. The clearing house has been closed over which the family physician once presided, and the people are found going hither and thither

and they are just as likely to settle upon a member of a cult as they are to select a regular physician. We have admitted so often, for reasons satisfactory to ourselves, that we no longer are engaged in the practice of medicine until the public is taking us at our word, and know not where to go when feeling ill. Is it surprising that the cults flourish? Or that the public should be censured for having seen fit to turn in their direction for relief when the erstwhile family physician tells them that he is no longer engaged in doing general practice?

## THE DIAGNOSTIC AND THERAPEUTIC VALUE OF THE INFLATION OF THE FALLOPIAN TUBES AND PENUMOPERITONEUM WITH CARBON DIOXIDE GAS\*

LUCIUS E. BURCH, M.D., F.A.C.S., Nashville

**K**ELLING in 1902 first inflated the peritoneal cavity with air for the purpose of inspecting the abdominal contents of two patients—one a case of ascites, the other a carcinoma of the stomach, in a woman with very relaxed abdominal walls.

Jacobus, of Stockholm, in 1911, revived the method and emphasized the safety of abdominal puncture.

Weber, in 1912, working in the private institute for Roentgen Diagnosis of Doctors Eugene Weber and V von Bergmann of Kiev, first conceived and carried out the idea of inflating the peritoneal cavity with air and then making a roentgenogram. He emphasized the importance of air or oxygen inflation of the abdominal cavity for experimental and diagnostic roentgenology and lays stress on the value of the method for obtaining good roentgenograms of the organs of the abdomen as well as for the roentgenographic representation of tumors and inflammatory swelling.

Dandy, in the *Annals of Surgery*, July, 1918, made the assertion that intestinal perforation could be diagnosed by the x-ray. The basis of this assertion was brought about by a case in the Johns Hopkins Hospital in which the diagnosis hinged between a ruptured typhoid ulcer or a miliary tuberculosis with intestinal involvement. A roentgenogram of the lungs was made which fortunately included the upper part of the abdomen. The picture showed the liver widely separated from the diaphragm by a collection of gas. Operation revealed a gangrenous, ruptured typhoid

ulcer. Dandy stated that this Roentgenogram gave him the idea of injecting air into the ventricles of the brain which he afterwards carried out. He injected air into the abdomen of dogs and suggested that it be used in the human being, evidently unaware at the time that it had been carried out in Europe a number of years before.

Stein and Stewart were the first in this country to inflate the peritoneal cavity with oxygen and then make a Roentgen examination of the abdominal organs. Their paper, published in the *Annals of Surgery* in July, 1919, gives a full history of the procedure and the technique that they used.

Dr. I. C. Rubin, of New York, was the first to suggest and carry out the inflation of the fallopian tubes with oxygen to determine the patency and the production of an artificial pneumoperitoneum. His paper on this subject was read before the A. M. A. at the New Orleans meeting and was published in the *Journal* of September 4, 1920. This paper first gave to the profession an accurate and safe method of determining the patency of the tubes and furnishes a definite prognostic as well as diagnostic procedure in sterility of the female. Rubin has worked out a simple and safe technique, has perfected the apparatus for measuring the amount and rapidity of the flow of the gas and called attention to the contraindications.

Peterson in his articles on this subject gave many valuable suggestions toward developing the finer details of the technique. Rubin states "that Peterson had the happy thought of combining the transuterine with the transperitoneal method of produc-

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

ing artificial pneumoperitoneum, and in his hands the method has become established as a valuable adjunct in gynecological diagnosis."

Last fall, accompanied by my x-ray colleague, Dr. C. C. McClure, I visited the clinic of Dr. Peterson at Ann Arbor. We were shown every courtesy by Dr. Peterson, his staff and Dr. Van Zwaluwenburg, the Roentgenologist of the University of Michigan. They were kind enough to demonstrate on patients the technique and to explain to Dr. McClure the art of taking and interpreting the x-ray plates. On my return I asked Dr. Rubin to have his instrument maker forward me the necessary apparatus, and since January I have used it as an aid in diagnosis in my gynecological work at the Vanderbilt and Woman's Hospitals.

To any one desiring to take up this work I would suggest as the first and most important step the acquisition and co-operation of a competent roentgenologist who is willing to give up some time and study to the procedure. Carbon dioxide is now used instead of oxygen, for the reason that it is much more rapidly absorbed and the discomfort from the inflation passes off in a few minutes. The necessary apparatus is a tank of CO<sub>2</sub> which may be obtained at any soft drink stand, a reducing gauge for the tank, a Rubin's syphonmeter attached to a mercurial manometer, a spinal puncture needle for puncture and inflation of the abdomen and Keyes-Ultzman canula perforated at the tip by several small apertures for the introduction of gas into the uterus for testing the patency of the fallopian tubes and providing a pneumoperitoneum by this route. A rubber stopper or washer perforated should be fitted on the Keyes-Ultzman canula to prevent the back flow of gas from the cervix.

Rubin and Peterson report almost a thousand cases without accident or untoward result, and from their experience one may conclude that the method is free of danger. There are certain contraindications that

must be carefully observed. The tubes should not be inflated when there is an acute pelvic inflammation nor should inflation be tried when there is a bloody or purulent discharge from the uterus. Under such conditions the transabdominal method should be used. The peritoneal cavity should not be inflated by either method in cases with large uterine or abdominal tumors or in patients with a serious circulatory change. In such conditions a fatal result might be brought about by a sudden rearrangement of the abdominal organs and the upward pressure of the diaphragm with a badly acting or diseased heart. The inflation should be carried out in the x-ray room for the reason that the CO<sub>2</sub> is rapidly absorbed; and if much time is lost in the moving of the patient from one part of the hospital to another there will not be sufficient gas in the peritoneum for a good roentgenogram.

The preparation of the patient is quite simple. Liquid diet the night before; no breakfast the morning of the inflation. In addition to restriction in diet, an enema the night before and repeated in the morning. If the peritoneum is to be inflated by the uterine route, a douche should be ordered A.M. and P.M. in order to remove any excessive secretion from the vagina. For inflation by way of the uterus I place the patient in the knee-chest posture; all instruments, of course, are sterilized, and the operator and his assistant should wear gloves. The posterior vaginal wall is retracted with a Sims speculum, the cervix is exposed and painted with iodine or picric acid solution five per cent and is then brought down to vaginal outlet with Vol-sellum forceps. A uterine sound is then introduced in the uterus in order to determine the direction and depth of organ, the Keyes-Ultzman canula is then inserted, and this is connected to the tube leading from gas tank and gas turned on. The rate of the flow of the gas and the amount is determined by the syphonmeter. Each pulsation of this instrument shows that sixty c.c. of gas is displacing the water in the

vacuum. There should be four pulsations to the minute or the passage of 240 c.c. of CO<sub>2</sub> in this period of time. The amount introduced depends on the size of abdomen, and therefore it ranges from 600 c.c. of gas to 1200 c.c. The mercurial manometer should be carefully watched. If the tubes are open, it will run from sixty to 100, and as the gas begins to flow in the abdomen it will begin to drop and will then go up and down between twenty and eighty. If it should go as high as 200, the canula should be slightly withdrawn in order that the gas may escape through the cervix. A pressure of 200 signifies that the tubes are closed, and it is not safe to use a higher pressure to inflate them. Before stating positively that the tubes are closed twelve attempts at one sitting with manometer going to 200 should be carried out. After the patency of the tubes are established the gas is allowed to flow until sufficient is introduced for a good roentgenogram. The picture is made at once with patient still in knee-chest posture. Peterson has devised a special apparatus that fits on x-ray table for keeping them in this position. This is quite useful, but not absolutely essential for good work. There is a certain amount of pain connected with the procedure, and patients should be told of this in order that it will not frighten them. The pain passes off very soon, as the CO<sub>2</sub> is quickly absorbed. A hot water bag to abdomen and aromatic spirits of ammonia are all the necessary remedies needed in making them comfortable. I have recently discovered that the method can be made almost painless by keeping them in the knee-chest posture for fifteen minutes following inflation by the uterine route and in the Trendelenberg posture for fifteen minutes following abdominal inflation. The reason for this is easily understood: the gas naturally goes to the highest part of the peritoneal cavity, which is the pelvis in either of these positions, and in fifteen minutes it is absorbed and the severe pain caused by the gas separating the liver from the diaphragm, which would occur if the

patient were allowed to get in the recumbent posture immediately following inflation, is obviated. For abdominal inflation the same technique is essential as in the uterine. The patient is placed in a Trendelenberg posture, the abdomen at the site of puncture, which is one and one-half inches below the umbilicus in the median line, is cleansed with benzine-iodine and alcohol. The puncture is rendered painless by first injecting the skin and then the deeper parts with one-half of one per cent solution of novocaine. A spinal puncture needle is used, pushing it first through the skin to the fascia which is easily recognized by meeting with resistance, and then at the next thrust it will pass into the peritoneal cavity. One naturally thinks that a coil of intestine may be perforated if the puncture is not very carefully made. I have made many punctures during operations with the abdomen open, and I can emphatically state that it is almost an impossibility to even bruise the intestine much less penetrate it. If there is scar in the median line from a former abdominal section then, of course, the puncture should be made at some other site, but this makes no difference except the peritoneal cavity is a little further away than at the site of election. After the cavity is inflated the patient is turned on the stomach, but still kept in the Trendelenberg posture, and the picture is made. After resting fifteen minutes in this posture the patient is allowed to get up, eat a full meal if they so desire, and walk out.

A full history of the case with a careful physical is absolutely essential before using either the abdominal or transuterine method for distention of the peritoneum. This method is only an aid in diagnosis, and before it is arrived at a careful consideration of the history, physical and vaginal examinations and the roentgenogram should be reviewed. To the man who makes one hundred per cent correct diagnosis this method will be of no use, but to the man who realizes that from ten to fifteen per cent of vaginal examinations are

unsatisfactory or faulty it will be of the greatest aid. In my own work in a short time I have been surprised at what the roentgenogram has shown up that I was unable to detect by vaginal and rectal examinations. These cases have subsequently been operated on and conditions found exactly as they were portrayed in the x-ray picture. A number of these I will show with lantern slides, also pictures of the pathological structures that were removed in order to give an idea of how accurate the roentgenogram is. It is also of great value in that class of cases that present marked pelvic symptoms, but the roentgenogram shows a normal uterus, tubes and ovaries. It renders these poor neuresthenics much more hopeful and paves the way for the neurologist to make a permanent cure. It is the only way to make a diagnosis of pregnancy in the early weeks. This is determined by the roentgenogram showing a marked broadening of the isthmus of the uterus or that part just above the vaginal junction.

In the study of sterility it is the only accurate method of determining the patency of the tubes, and when these are occluded operations on the cervix are useless, and other procedures meeting the demands of the case should be carried out. Peterson found that in a series of thirty-six sterile women thirteen, or a little over one-third, conceived after inflation, and that ten of these went to full term, the other three aborting. He also states that quite a number of women who have had menstrual pain have been cured or relieved by the inflation of the tubes. I feel that the following conclusions are warranted concerning pneumoperitoneum:

(1) Inflation of the peritoneum by either the abdominal or uterine route is perfectly safe, provided the contraindications are remembered and carried out.

(2) It is almost free of pain if the patient is kept in the knee-chest or Trendelenberg posture during the inflation and for fifteen minutes after it.

(3) It is the greatest aid in obscure pel-

vic cases and will make an accurate diagnosis possible.

(4) It is possible to diagnose with certainty pregnancy in the early weeks.

(5) The determination of the patency of the fallopian tubes should be the first step in studying cases of sterility.

(6) A certain number of women who are sterile and whose tubes have been found patent will conceive following inflation.

#### DISCUSSION ON PAPERS OF DRs. BURCH AND SMYTHE.

DR. C. J. CARMICHAEL, Knoxville: Dr. Burch does not distinguish between the cases injected through the uterine cavity and those through the abdominal wall. I would like to know on which type of cases he would use transuterine route and which the abdominal route. Also why he uses CO<sub>2</sub> instead of air. We have used air here with a high degree of satisfaction.

He also referred to keeping the air away from the diaphragm. Sometimes we have tumors of the pancreas, the liver and the kidney when we want to turn the patient up the other way, and I take it that in those instances he also would turn them up the other way.

I do believe that the work is of value if carried out just as Dr. Burch told us. I particularly wish to know why he prefers the CO<sub>2</sub> instead of air.

DR. LUCIUS E. BURCH, Nashville (closing on his paper): The contraindications for the uterine route are as follows:

A bloody or a purulent discharge from the cervix or an acute pelvis. It is also contraindicated where pregnancy is suspected and again after the menopause. If any one or more of these contraindications are present, the abdominal route should be used. The abdominal route and the uterine route are both contraindicated with a badly acting heart.

CO<sub>2</sub> is used instead of air or oxygen for the reason that it is absorbed much more quickly. CO<sub>2</sub> is absorbed in about ten minutes, air in about twenty-four hours, and oxygen in about forty-eight hours.

It is always advisable to make a number of attempts by the uterine route, if the tubes are found to be closed. Peterson at one sitting makes twelve attempts and, if unsuccessful, has the patient to return in a few days for another trial. It is impossible to determine accurately with the abdomen open by means of a probe whether the tube is patent or not, for the reason that the isthmus of the tube is so small that it will not admit of a probe.

I want to congratulate Dr. Smythe on his results in the two cases reported. The first one was evidently a case of sterility, due to an old

salpingitis, and when he operated he loosened up adhesions which interfered with the potency of the tube. In the last number of the *Journal of Surgery, Gynecology and Obstetrics* will be found almost a duplicate of the operation which Dr. Smythe performed in the second case.

Sterility in the female should not be treated until the examining physician is absolutely certain that the fault does not lie with the husband. A careful physical examination should invariably be made, in order to rule out any constitutional disease. Operations on the cerix, the uterus or appendages should not be carried out until the patency of the fallopian tubes is established, and this can be accomplished only in one way, and that is by inflation.

Dr. Frank D. Smythe (closing on his paper): I was interested and enlightened by Dr. Burch's paper, but have had no personal experience with the method described by the essayist, hence am unable to discuss it from personal experience. I agree that Dr. Burch's knowledge of the anatomy of the tubes is in the main correct; nevertheless the tube in this case (or the one cited) was invaded by the probe, and we succeeded in making it possible to accomplish what the patient desired

and hoped might be accomplished by the treatment.

There was laughter in the audience during Dr. Burch's discussion of the papers, and that reminds me of what the husband of one of my patients, who is a Jew, said, when he brought his mother, who had recently arrived from Germany, to see me. He was speaking to his mother in an animated and pleasant manner, in German, and turning to me he said, "Mother, this is the man who put the baby in mine wife."

The plastic operation proved to be successful in the first case, and we owe it to these patients to do everything that can be done to correct the sterility, which is an unfortunate thing for the woman; and we should not hesitate to operate when the other causes of sterility have been excluded.

I believe the Reuben procedure is an excellent one and will enable the surgeon to know before hand whether or not the tube is patulous. Nevertheless, there are conditions within the pelvis capable of preventing fecundation of an ovum that cannot be remedied except by operation. So the mere fact that the tubes are patent is not pathognomonic evidence that the patient will not remain sterile without surgical intervention.

LIGATION OF THE EXTERNAL ILIAC ARTERY FOR ARTERIO  
VENOUS ANEURISM\*

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W. O. FLOYD, B.S., M.D., F.A.C.S., Nashville.

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**A**NEURISM, especially of traumatic origin, of the iliac arteries is a very rare condition. Callander, in *Annals of Surgery*, 1920, collected a series of 447 cases of arterio venous aneurism. Of the fifty-seven cases that he analyzed in detail, twenty-six of them were of the femoral artery, but none were reported of the iliacs.

Ott, of the Mayo Clinic, in *Annals of Surgery*, November, 1921, reported twenty-one cases of aneurism independent of circoïd and thoracic, operated at the Mayo Clinic from 1909 to 1918, inclusively. He stated that two of these cases were of the iliacs, one of which was external, and recovered; and the other one was of the common iliac, and died two days later.

Lucke and Reas, in their studies on aneurism, *Journal A. M. A.*, 1921, report that in 12,000 Philadelphia necropsies they found 321 intra-corporal aneurisms, twenty-eight of which affected the branches of the aorta. In this number there was only one of the iliacs, that being of the internal iliac.

Halstead, of Johns Hopkins, states in the July, 1912, *Bulletin of the University*, that the ligation of the common iliac artery was first performed by Gibson of Baltimore in 1812. This was done for hemorrhage. The patient died from peritonitis.

This operation was performed first for aneurism in 1827 by Mott, of New York, for an ilio-femoral aneurism by the extra-peritoneal route, with recovery of the patient.

In 1860, Smith published the first report of a series of operations for the ligation of

the common iliac artery. There were thirty-two cases in this collection, the most of whom were operated upon for hemorrhage or aneurism of the external iliac artery. There were twenty-five deaths in the thirty-two cases, or a mortality of about eighty per cent.

Smith later states that in ninety-five cases of ligation of the external iliac for aneurism, sixty-nine recovered and twenty-six died, which is a mortality of about twenty-seven per cent, or less than one-half the mortality for the same operation when performed upon the common iliac artery.

The cause of death in eleven of the twenty-six cases, or nearly one-half of those in which the external iliac was ligated for aneurism, was given as gangrene of the limb. This presented a striking contrast with the same operation upon the common iliac, in which there was but one instance of gangrene in the eight cases ligated.

We should remember, however, that twenty-eight of Smith's thirty-two cases were operated upon through the extra-peritoneal route, and in this way the traumatism in ligating the common iliac would be considerably greater, and would naturally account to some extent for the higher mortality rate in its ligation as compared to ligation of the external iliacs.

Halstead, in his report, added thirty new cases of ligation of the common iliac to the sixty-two cases previously reported by Smith and Kummel, Smith and Kummel's cases occurring chiefly before the period of aseptic surgery; while Halstead's cases dated from 1880, which was about the beginning period of aseptic surgery in America. Twenty-one of the thirty cases were ligated for aneurisms, principally of the

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\*Read before the West Tennessee Medical and Surgical Association at Jackson, Tenn., May, 1924.

external iliac artery. Five cases, however, were reported as ilio-femoral aneurisms, and three were reported as femoral aneurisms.

In Halstead's cases, gangrene occurred in seven of the twenty-one cases, or thirty-three per cent. There were ten deaths, or a mortality of about thirty-two per cent. The principal causes of death were given as hemorrhage and gangrene. One case, that of Judd, in 1911, did not rally from a three-hour retro-peritoneal ligation.

In Kummel's thirty cases, the most of which were done before the period of aseptic, gangrene occurred twelve times, or in forty per cent of the cases in which the common iliac was ligated. He did not give the percentage of gangrene occurring following the ligation of the external iliac, as Halstead later did, but his higher percentage of gangrene as compared to Halstead's report might somewhat be accounted for by its being done mostly in the so-called period of septic surgery.

Kummel comments upon this point as follows:

"It seems naturally, within certain limits, that the nearer the ligated vessel is to the central organ of the circulation, the easier it is for the collateral routes, by means of the increased pressure from the heart, to develop; this certainly seems to hold true of the vessel which we are considering, the common iliac.

"Astonishing as it may seem, it nevertheless appears to be a fact, as already stated, that the ligation of the common iliac less endangers the vitality of the lower extremity, and makes easier the establishment of the collateral circulation than does the ligation of a peripheral vessel—for example, the external iliac.

"I do not hesitate, therefore, in the case of aneurisms of the external iliac and high femoral arteries, to express a preference for the ligation of the common iliac, never when ligation of the external iliac is possible, for thereby the definite cure of the aneurism seems to be more certain of ac-

complishment, and the life of the limb is less endangered."

In regard to gangrene Halstead makes the following comments:

"There is abundant evidence in support of the view that, in a general way, the larger the artery, or the nearer it is to the heart, the less the impairment of the circulation attending its ligation. The subclavian, for example, may be tied quite without fear of gangrene, whereas from ligation of the axillary artery, the circulation of the extremity is somewhat endangered, but not so much as from ligation of the brachial.

"Peripheral gangrene has not been observed in consequence of ligation of the aorta. It may occur after ligation of the common iliac, has occurred much more frequently after ligation of the external iliac, and has followed ligation of the popliteal artery in a considerable percentage of the cases."

Function: Of the eighteen cases that have recovered from ligation of the common iliac artery up to Halstead's report in 1912, the most of which was done for external iliac pathology, only eleven of these cases reported as to the function of the limb following the ligation. Only four of the eleven, or thirty-six per cent, had a perfect function, the others complaining of some pain or some weakness in the affected limb.

In looking up the recent literature, I only find an occasional case reported of ligation of the external iliac for aneurism, the most of these being arterio-venous aneurisms, as a result of war wounds, and practically all done transperitoneally.

The reason given by Halstead for the rarity of these conditions is that a wound of the external iliac usually proves fatal at the time of the injury, due to the size of the vessel.

One case reported by McClay, in the *Edinburg Medical Journal* in 1917, was almost identical with my case. After ligating both the external iliac and the common femoral just below their respective origins,

McClay attempted to remove the aneurism.

Upon opening the sac, he encountered a terrific hemorrhage, which could only be controlled by pack, and the operation was discontinued. Three days later he attempted to remove this pack, when he again encountered profuse hemorrhage, and again had to repack the wound and discontinue the operation. Several days later, after ligating the deep epigastric artery and by compression over the abdominal aorta, he was able to remove the packs and control the hemorrhage. This patient recovered, but had to be kept in the hospital nearly two months, and it was about two and one-half months more before he was able to walk.

Case Report: This patient was a male, a farmer, 31 years of age, and was referred by Drs. Alderson and Farmer, of Russellville, Ky. He gave a history of having been shot about two months previously with a thirty-eight automatic pistol. He stated that he was in a sitting posture when the accident occurred. The bullet had entered in the region of and slightly below McBurney's point, ranging downward and slightly backward, and could be palpated posteriorly just beneath the skin in the region of the lower right buttock. The patient became unconscious immediately, and the wound bled very profusely at the time of the injury; the patient was greatly shocked and was said to have been pulseless for several hours. He finally rallied, however, after the administration by his home physicians of a considerable quantity of saline and morphin, following the final control of the hemorrhage. After his wound healed, there appeared a large throbbing or pulsating mass beneath and slightly below, but principally above, Poupart's ligament on the right side, and the right leg and thigh gradually became edematous and painful.

I saw him on September 7, 1922. It was very evident that he was suffering from a traumatic aneurism of the arterio-venous variety. There was no abnormality of the heart or its action so far as I could determine.

He was sent to St. Thomas Hospital, and on the following day I ligated the external iliac artery and vein just below their origin on the right side. I also ligated the common femoral artery and vein just below the aneurismal mass.

The mass was about the size of a man's fist, and extended up near the beginning of the external iliac artery. The pulsations of this mass ceased immediately following these ligations. The iliac artery was first ligated separately from the vein; the right ureter was compressed slightly downward, while the peritoneum was pulled over

to one side of the artery and a knife stab wound incision was made in the peritoneum to enable the easy passage of the ligature carrier around the artery. Heavy silk material was used, but after the ligation the pulsations of the stump seemed so strong that I put an additional ligature of chromic catgut about one-fourth of an inch higher up the vessel, and only tied it tight enough to partially occlude the vessel. This was done in an effort to decrease the volume of arterial blood which was striking so forcibly against my silk ligature that I feared the possibility of the ligature cutting through the arterial vessel. The vein was then ligated separately at the same level with the artery, and then the femoral artery and femoral vein were also ligated separately about one and one-half inches or two inches below their origin. These ligations were situated about five inches or more apart.

No effort was made to remove the aneurism or even to investigate it, as it would have been necessary to have divided Poupart's ligament in order to have removed it, so we left the mass undisturbed.

This patient was put to bed and artificial heat was applied to the limb at intervals for several days. The limb always became somewhat cold after the heat was left off for awhile, otherwise the recovery of this patient was uneventful and he left the hospital in about two and one-half weeks after the operation, with only a slight edema of the leg at that time. The patient was able to do his usual work on this limb until seventeen months later, when we had him return for observation following a report that he was again having some edema. In addition to a medium amount of swelling of this limb, there had appeared a few small, purplish spots about the calf of this leg. These spots very much resembled beginning ulcerating areas that one often sees in varicosities of the leg. The patient was sent to the hospital and the limb elevated and heat was applied at intervals throughout twenty-four hours and he was given a prolonged hot sitz bath twice a day. We were agreeably surprised to see the swelling disappear in three or four days and the blue spots also clear up. The patient, without our knowledge or consent, left the hospital on the fifth day, but now, three months later, he reports himself as well and working every day.

I think the main thing in these cases is to ligate the veins in addition to the arteries in an effort to prevent gangrene from setting up after the operation. Also, the aneurismal tumor should be removed where it is possible to do so to prevent the collateral circulation from washing away fragments of the clot, which lodge, as emboli or thrombi, in the terminal vessels, thus producing gangrene.

## REPORT OF ONE HUNDRED FIVE CASES OF APPENDICITIS\*

W. A. BRYAN, M.D., F.A.C.S., Nashville

THIS series of one hundred five cases embraces all the patients on whom I operated for appendicitis in the Woman's Hospital during the year 1923. No cases operated elsewhere have been included, and no effort has been made to ascertain the number of these outside cases, most of which were operated at Vanderbilt Hospital, Nashville General Hospital or in the home. All cases that were diagnosed appendicitis and found at operation to be something else have been excluded. All those diagnosed something else and found on opening the abdomen to be appendicitis have been included in the series.

The distribution of the cases throughout the months of the year was of no especial interest, except that beginning late in June thirty-five cases were operated in twenty-nine days. Nearly all of these were acute. The incidence for the year was one case for every three and one-half days, or two cases per week; but for this period of twenty-nine days the incidence was one and one-fifth cases daily or eight cases per week, a sudden increase of more than 300 per cent over the average for the year. Or, if compared with the remainder of the year, exclusive of the twenty-nine days, the increased percentage was 433. No explanation is attempted for this sudden increase in the number of cases, which just as suddenly dropped back. One physician with whom the subject was discussed suggested that it was blackberry time. To be sure it was, but there was no evidence of casual relationship except the coincidence.

Fifty-three of these cases were female, fifty-two were male. The youngest case was six years, the oldest sixty-seven. Thir-

ty-nine were under twenty years; forty-eight were between twenty and forty; eighteen were between forty and sixty-seven.

The diagnoses recorded on the charts are:

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| Acute appendicitis .....                | 49 |
| Subacute appendicitis .....             | 16 |
| Chronic (or recurrent) appendicitis.... | 15 |
| Abscessed or ruptured appendix.....     | 22 |
| Cholecystitis .....                     | 3  |

The last group only needs to be discussed. These three cases, from their history, symptoms and physical findings, indicated rather clearly a diagnosis of cholecystitis. They indicated just as clearly that it was not appendicitis. One of the three I saw just as he was recovering from a severe attack, and the examination suggested only gall-bladder disease. On operation these three cases showed no evidence of disease present or past in the gall-bladder, no thickening, no stones, no adhesions, no distension, and the appendix was found in each to be diseased. The gall-bladders were not disturbed. Relief of symptoms followed in each, which, though the time has been short, indicates the correctness of our judgment and the incorrectness of our diagnosis.

The average number of attacks was 2.4. The largest number was twelve; also twelve of the cases had no previous attack.

There was a history of catharsis, administered by the physician or by patient or family, in twenty-seven of the cases. This indicates that we have only accomplished three-fourths of our work in teaching that appendicitis patients should not be given a purgative, or to make it more to the point, that in case of pain in the abdomen, no purgative should be administered until ap-

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pendicitis is excluded. Enemas, yes; purgatives, no. To confirm this contention, evidence is abundantly found in this group of cases. Total number of cases 105. Total number of ruptures (or abscess), twenty-nine. Total number of purgatives, twenty-seven. Total number of purged cases rupturing, eighteen. To put it more perceptibly, twenty-seven cases were purged or the effort was made. Of these, eighteen ruptured, sixty-six and two-thirds per cent. No one would likely contend that the purge was administered because of suspicion of abscess or rupture. Seventy-eight cases were not purged, and of these only eleven were ruptured, or fourteen per cent. This makes a difference of fifty-two per cent and more in favor of rupture as the percentages are counted above. It is more emphatic to say that ruptures were five times as frequent in those in whom purgatives were administered. It is only fair to say that the group receiving no purgatives included all those who came promptly for surgical relief, and those receiving purgatives included an excess of those inclined to procrastinate. It is immaterial in the net result. The two P's should be equally avoided in appendicitis—procrastination and purgation.

It is superfluous to discuss the usual symptoms and signs of acute appendicitis, or the collateral evidence that may obtain in the interval. But two items must be discussed—namely, white blood count and fever. The reason for selecting these two is that some one is eternally being misguided by one or the other of them. By way of setting myself right in these matters, it is utterly immaterial to me if all cases of acute appendicitis must have a leucocytosis. I am only raising the question: "Have they?" It is also of no concern to me if they are right who teach that unless there is a rise of temperature above normal the patient cannot have appendicitis. What Dr. Murphy may be understood or misunderstood to have said about it is also immaterial, if the facts should not happen to coincide with his statement.

The leucocyte count in these cases had the extremes of 32,600 and 4,400. There were twenty-three in the group, not all of them acute, who had counts below 9,000. There were eleven, all of them acute, of course, whose counts were more than 20,000. There were three cases of acute rupture who had counts of 6,000, 8,000 and 8,000. These represent practically three per cent of the total group and more than ten per cent of the ruptured cases—a fact worth very serious consideration, that this ten per cent is just that part of the worst form of the disease, more than ten per cent; for in this classification the abscessed cases are combined with the ruptured cases and the total is twenty-nine, of which three ruptured ones had these low, normal or subnormal, counts. The laboratory can help, but even the most daring prophet cannot imagine when it will be able to replace the doctor.

Now as to fever: There are some who contend that if there is no fever there is no appendicitis; or perhaps it is better to say that they say that if there is no fever, has been none and is going to be none, it is not appendicitis. It is proper, I believe, to observe tritely that a lot of these people do not know whether they have had fever since the onset of symptoms, and the doctor who sees them first doesn't know any more about what the temperature was before his first call than the surgeon knows. This does not happen to belong to the group of conditions alluded to in the maxim of "What you don't know won't hurt you." On the other hand, suppose the temperature is normal at the time of the physician's first call and continues normal when the surgeon sees him; is this dictum a thing that rational men may abide by, or is he foolish who advises waiting for lack of fever, and is the patient safe who entrusts himself to such an adviser?

In this series there are, as stated above, forty-nine acute cases. Of these forty-nine, there were nineteen whose temperature was  $98 \frac{3}{5}$  or less on admission. Six registered  $98 \frac{3}{5}$ ; two  $98 \frac{2}{5}$ ; one  $98 \frac{1}{5}$ ;

seven 98; one  $97 \frac{4}{5}$ ; one  $97 \frac{3}{5}$ ; and one 97. That represents more than one-third of the acute cases. I do not contend that some of these may not have had a rise of temperature above normal before I saw them, but I had no way of concluding this from the reading of the thermometer and do not see how such ignorance should help in the diagnosis. Furthermore, I do not doubt that some of them, if I had waited, would have gone above normal; but who with an acute, perhaps ruptured, appendix would want to wait for so uncertain a sign, when there are sufficient others to justify an immediate operation?

The incisions employed were: McBurney in eighty; right rectus, seventeen; median, six; McBurney and midline, one; incision (of abscess), one.

This requires little comment. McBurney is the preference if only appendectomy is contemplated. In the case where both the McBurney and median were employed, an excess of free fluid was found, and was

considered to warrant further exploration than was possible through a McBurney. Hence a median incision was made, but no additional pathology was found.

In all abscessed and all ruptured cases drainage was made. The drain was inserted directly through a small McBurney incision in four walled-off cases in which the appendix was not removed. In all ruptured cases one or two drains were inserted, through stab wounds, never through the operative wound, which, I think, accounts for the fact that no hernias appeared.

There were three deaths. One in a man who died in a few hours after admission, after removal of the appendix under local anesthesia. A second case died of septicemia about six weeks after operation. The abdomen caused no trouble after the first few days following the operation. The third died three days after operation for ruptured appendix, from edema of the lungs. She was sixty-seven years of age.

## MILK INJECTION IN INFLAMMATORY EYE DISEASES\*

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WITH the discovery of diphtheria antitoxin in 1890 by von Behring, a new field of therapeutics was opened. Since that time a sera or vaccine has been made or attempted for all known diseases of bacterial origin. These sera and vaccines were exploited by the various manufacturers; were used by the profession for a time with varying reports of success and failure, and then the majority were cast into the discard. Very few have been accepted and stamped with the general approval of the profession, although in some cases they seemed to do good.

For the past few years more attention has been paid to the para-specific action of the sera than heretofore, and many of the good results previously attributed to their specific action is now believed to have been purely a proteid reaction. Especially is this true in the field of ophthalmology.

In infections in and about the eye we have an entirely different condition to deal with than we do in a general systemic infection.

In a systemic infection of any importance there would be a characteristic blood picture, a reaction of the system against an invading host, all the bodily resources would be marshaled to repel the invasion, a barrier of leucocytes would be thrown around the point of infection, antibodies would be formed in the blood stream, and the infection overcome before serious and lasting damage was done.

In an infection of the eye, the area involved is so small and the tissues affected are so delicate and every cell is so important in carrying out the function of vision

that irremedial damage may be done before any general systemic alarm is sent out.

In September, 1921, I read an extract from a Berlin Journal of Ophthalmology in which injections of sterilized milk were recommended in inflammatory eye conditions. Soon after I read other articles on the same treatment by European ophthalmologists, and their results were so much better, even after giving them the customary discount allowed statisticians, that I determined to try it myself as most of the time-honored treatment seemed to follow "a watchful waiting policy."

On January 1, 1922, my term of service began at the Knoxville Health Center, and on January 3 I gave my first injection of sterilized milk.

This case, W. M., colored, aged fourteen, well nourished, had been treated since December 2nd. Diagnosis: Phlyctenular Keratitis. The Wassermann was negative. He had received the usual treatment, including serum. At that time he had a two M.M. ulcer of the left eye at six o'clock in the limbus, intense redness, pain and photophobia. He was given two c.c. milk January 3rd. Returned January 4th. Pain had ceased very much. He had an injection of two c.c. repeated; and again on January 6th, when he was so well on the way to recovery that no more injections were given, but was told to return for observation, which he did, until February 10th, when he was discharged and had no further trouble.

The prompt response to treatment in this case led me to try it in other cases until now I have used it in about 100 cases, and my results are so much better than with ordinary treatment that I think it is well worthy of a place in ocular therapeutics.

My 100 cases pale into insignificance alongside of the report of Bargy who has used it in 3,000 cases.

Bargy is very conservative in his statements. He says that it is not a panacea in all eye diseases, but that it is of great

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value in the treatment of inflammatory and suppurative diseases of the anterior segment of the eye.

"Pain, edema and secretion disappear with astonishing rapidity in most cases. This is especially true if the case is a recent one. Milk is a valuable remedy in the treatment of postoperative infections and has proven of great value as a prophylactic against infection in perforating wounds of the eye."

Its value in gono-blennorrhea cannot be questioned. The good effect is noted a few hours after the first injection, and ulcers are either prevented or retarded in their progress. In acute trachoma he found it lessened the severity of the disease, but was absolutely valueless as a curative measure. Pillot, who seems to have made more scientific observations along with treatment than any other, tested the gonococcus contents of the epithelium every six hours in nineteen cases. After the second injection the gonococci disappeared from the ocular conjunctiva with subsidence of chemosis and redness, but on the palpebral conjunctiva and retrotarsal folds they did not disappear entirely. He does not urge exclusive use of this treatment, but says there is no better way to reduce the swelling of the lids and thus prepare the soil for the classical treatment by nitrate of silver.

Lieberman has treated 1,000 cases of gono-blennorrhea, and in no case has there been ulceration of the intact cornea, while that already existing has been healed. He therefore considers the omission of milk therapy in gono-blennorrhea as an omission of duty. American literature on this subject is not so plentiful. It seems that American ophthalmologists are more conservative and follow more closely the beaten paths.

Barkan and Nelson, of San Francisco, say: "From personal experience we can heartily endorse the use of milk in certain ocular diseases. There is no doubt of its efficacy in iritis, iridocyclitis and gonorrheal conjunctivitis and as a prophylac-

tic in infections of the eyeball following perforating injury."

Dr. Wm. H. Wilder, of Chicago, says: "I think a continued study of this subject will show us how much in error we have been in the past in our supposed remarkable results from the use of tuberculin in cases that we thought were tuberculosis of the eye. Whether those cases that responded to injections of tuberculin were tuberculosis is a mooted point and discredit has been thrown on all our theories in regard to that disease of the eye as a result of the recent investigations in serum and protein therapy. He uses typhoid serum and reports good results.

Ben Witt Key, in January 19th A. M. A., reports a series of ninety-one cases in which he used injections of anti-diphtheric serum with good results. He also pauses and reports two cases of advanced hypopyan keratitis in which he used sterile milk with violent reactions and no beneficial result.

The literature is full of reports of cases by different observers, so I shall report some cases that I have treated in the past two years. I reported above the first case I treated.

February 11th Mrs. E. C., aged forty-five, ulcer 2 M.M., 12 o'clock limbus, eye very red, intense pain and photophobia. She was given three c.c. milk. February 12th she had no pain nor photophobia; redness markedly diminished. February 13th ulcer healing, no redness; injection not repeated; uninterrupted recovery. This ulcer was of the phlyctenular type, and she had for two years previously frequent attacks. Since that time she has had no further trouble.

January 12, 1924, S. S., aged sixty-eight, right eye red and painful for three days. Examination of eye; right eye, fine ciliary injection post synechia. Diagnosis: Iritis. After repeated instillations of atropin I was able to dilate pupil. He was given sodii salicylate grs. ninety daily. Returned January 14th; eye still red and painful. He was given three c.c. sterile milk. Returned next day; said his pain left two hours after the injection. January 16th he was given four c.c. January 18th, comfortable, redness disappearing, so no further injections were given.

C. Mc., colored, injured November 21-23 while driving a spike. He was treated by a local doctor. He was sent for examination to me by an insurance company December 6th. Upon examination

I found a dense scar two M.M. in diameter at seven o'clock, surrounded by an area of nebulous opacity. R. v. 1.2, L. v. .5, with pinhole disc 1.0. January 14th he returned to my office and said eye began to pain. I found upon examination that the scar had broken down and there was a foul ulcer with overhanging edges. The ulcer was curetted and touched with five per cent trichloroacetic acid. January 15th, slough had separated and showed a bulging of Descemet's membrane, so Shahan's Thermophone was applied one minute at 160 degrees, a sliding conjunctival flap was made and the ulcer covered. Five c.c. of sterile milk was given while on the operating table.

January 16th, no pain in eye. January 18th, five c.c. of milk was repeated. January 19th, sutures of flap were removed. In a few days the flap slid down, leaving a small pseudo-ptygium, and at this writing he has had no further trouble and has vision of .5 without pinhole disc.

Mrs. F., aged thirty six; March 1, 1924, has six children, youngest one week old. She has had corneal ulcers on right eye following each of her six confinements. Examination after staining eye with fluorescein found six to ten small punctate ulcers of right cornea, marked pain and photophobia. She was given usual treatment. She was seen again March 2nd; very little if any improvement. March 3rd, on account of the convenience of the preparation, she being at home, I injected five c.c. of aolan about five p.m. March 4th I visited patient and found pain and photophobia gone. Asked her when pain ceased. She said about 9:30 last night, or about four hours after the injection. She was given five c.c. on March 5th. Uninterrupted recovery. She had with her previous attacks been treated for weeks and at one time was in the hospital three weeks. In this case I purposely delayed the injections for two days.

W. J. D., March 31, 1922, was struck in the right eye by a piece of steel. Examination revealed a small penetrating wound in limbus at 3 o'clock; small piece of steel visible in anterior chamber lying on iris near pupillary leader; small keratome incision was made and steel removed with a magnetized iris forcep. He was given three c.c. sterile milk on table, four c.c. April 2nd and 4th. Very little reaction of eye and very slight pain. Recovery complete with loss of .2 vision.

The time allotted this paper is too short to report more cases in detail. I have used the treatment in ten cases of interstitial keratitis, but not with such marked results. The redness and pain were somewhat relieved, but it is of no value as a curative measure. Also I have used it in two cases of keratitis in dendriformis with no appar-

ent effect and am convinced it is only valuable in acute infections. I have failed to note the violent reactions reported by some observers. It is true that my cases for the most part have been ambulatory cases, and I had to rate my reaction on the report of the patient. My hospital cases have never run a temperature higher than 100 2/5 F.

While assisting Dr. L. Webster Fox, I had opportunity to observe the cases more closely as they were in Medico-Chi Hospital. None of them ran a high temperature. Their leucocyte count ran from 9,000 to 14,000.

Nelson and Barkan say that the difference in reactions is in proportion to the bacterial content of the milk, and with their experiments on guinea pigs prove that the results obtained is due to the bacteria in the milk and not the protein, with which I am not entirely in accord. I have not selected any special type of milk—just send to the milk depot near by, sterilize and give what they send me; only specify that it shall be "today's milk." How and what causes the reaction is not definitely known. I believe it is a protein reaction, and I know it is disarranging all the previous theories of serum therapy.

With antidiaphtheritic serum I have had no experience, and I see no reason for using it instead of milk therapy. No case of anaphylaxis or serum sickness has been reported from milk injections. They can be used without thought or questioning about previous injections of serum, and this is a considerable factor in its favor.

I think that the chief reason why it is not in more general use is its lowly origin. If it had to be imported or be prepared in some elaborate way, it would be used more widely. Part of this objection Dr. Fox removed by using the French for milk and calling it the "Lait Treatment," and it gives just as great results under that name.

It is not a panacea for all ocular inflammations and should not be used to the exclusion of other remedies, but rather in conjunction with them. It goes without saying that the cause, focal and systemic

infections, should be sought and removed, but active treatment of the local manifestation should be energetically pushed while this is being accomplished; otherwise valuable time may be lost and irreparable damage be done.

My technique which I have used since the beginning is as follows:

Whole milk is boiled ten minutes; allowed to cool to about 100 degrees F.; then the dose is drawn with the syringe from the center of the container to avoid coagula and fat. The skin of the gluteal region or abdomen is painted with iodine and the injection made in the deep subcutaneous tissue. One to five c.c. are given as the initial dose. Subsequent doses may be increased, but personally I have never found it necessary to give over six to eight c.c. and do not think it necessary. Some local reaction follows. The site is painful and a small induration persists for some time, but I have never had an abscess to follow an injection.

I don't think it necessary to give more than four to six doses. Four is ordinarily sufficient; for if the case is suitable, there is so much improvement by that time that more is not needed; and if the case is not improving, it is useless to carry the treatment farther. The more acute and more recent the case, the better the result and the more marked the improvement. I have purposely, this far, confined this paper to the treatment of the eye diseases, but the question has repeatedly forced itself upon me since beginning the use of milk injections. If they give such good results in inflammations about the eye, why not use them in general infections, especially infections of known origin and conditions arising from focal infections. Some years ago the Phylacogens and other serums were used in the treatment of rheumatism with good results in many cases, and I believe the result was due entirely to the protein reaction.

Dr. Tom Barry reports the use of milk injections in epididymitis in acute and recent cases with marked and early improve-

ment. The old chronic cases were not benefited.

Dr. J. Victor Henderson reports use of aolan in a very desperate case of ruptured appendix with very marked early improvement and cure. You all have cases of infection occurring in individuals that are physically below par in which the system does not react and wall off or limit the infection; you have a spreading infection with a falling leucocyte count or a decrease of the polys. Why not give it a trial? It is not so likely to cause trouble as the two gr. dose of calomel that you give with impunity. In summing up the reasons why parenteral injections of milk should be used, I would say on account of the rapidity of action, powerful analgesic power, the rapidity with which it decreases swelling and brings about a reparative process. Freedom from anaphylaxis and serum sickness, cheapness, convenience (everywhere obtainable), no elaborate preparation. It accomplishes all I have claimed and results are what we want; and if we do not use the best therapeutic measures at our command, we are not true to our patients, ourselves nor our trust as members of the medical profession.

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DR. H. E. CHRISTENBERRY (Knoxville): Non-specific or protein therapy in the treatment of ocular diseases dates back to 1915, when it occurred to Schmidt and Saxl to use cow's milk for these injections. They chose milk because it was easy to procure and its chemical composition was constant, where as the composition of artificial preparations of proteins and their derivatives are subject to great variation. Since Schmidt and Saxl first called attention to milk injections in ocular as well as general diseases it has been used in numerous cases by ophthalmologists, often with the most satisfactory results. From personal experience I can most heartily endorse its use in most of our ocular diseases, and I might say all, as it can do no harm and may prove a great help in time of need.

The principle of this form of therapy concerns a large number of affections and seems to present possibilities of further development. Its effect is to strengthen the defensive forces of the organism. It is probable that this is the basis of the early and most primitive methods in practice that we encounter historically. No doubt the stories

heard in our pre-medical days of remarkable cures of rheumatism following a painful encounter with a swarm of angry bees, were simply an unconscious tribute to this type of therapy.

We are not yet prepared to say just how and why we get such results from this treatment, any more than we are prepared to know all about our radio—but it works.

Various hypotheses have been advanced to account for the phenomena set in motion by the introduction of foreign proteins into the economy. Some believe the chief factor in the therapeutic result is from leukocytic stimulation, but this point is variously regarded, since many conflicting experimental results are reported. Others believe it causes development of proteolytic ferment, which has the power of digesting such matter and transforming it into pepton, utilizable by the cellular protoplasm in nutritive process.

The stimulus thus transmitted to the cells does not, however, cease at this point, but continues the production of ferments which, no longer encountering foreign protein, find their way into the blood stream and concern themselves with destruction of the albumen of inflammatory exudates and that in the bodies of the invading organism. This is plausible and in harmony with Metchnikoff's explanation of cellular immunity.

Muller, who has given the subject much minute study and has had wide experience in the practice of non-specific protein therapy, maintains that the stimulus of such injections increases the immunizing activity of the bone marrow—basing his opinion on the production of the fresh granulated neutrophile leukocytes and increase of antibodies in the serum, the presence of which is especially noticeable in the neighborhood of foci, for example, in furunculosis, where they set in motion the healing process or lend support to the defensive measures already in operation.

Other investigators have advanced various theories in regard to the mode of action of the injected proteins and most of them possess some element of probability. All of them agree that certain changes occur in the blood and that leukocytosis is a sequela. Whatever the final answer to this problem may be, there is abundant chemical and experimental evidence of the value of non-specific protein therapy to warrant the opinion that a valuable therapeutic weapon has been added to our armamentarium. We leave that with you for further investigation. You may do it for yourself, or let the other fellow work it out, but in the meantime try it out and see what gratifying results you can get from this treatment.

DR. EDWIN WATKINS (Memphis): My experience with milk injection is very limited, but it seems to me that we are just as far from the solution of the action of milk as we were twenty-five years ago with all protein therapy. From what I have read and heard about it, it seems

to me that the good results from injections of milk are undoubtedly due to the bacterial content. Barken and Nelson presented a paper at the last A. M. A. meeting in which they said there was a wide difference between the effect of milk injections in Vienna and in San Francisco. They got much better results in Vienna, where the milk was practically clean. So I think the evidence shows that the effect is due to bacterial content.

It is a very interesting subject, and I think from what I know about it we are warranted in using milk injections in all inflammatory eye diseases.

DR. REESE PATTERSON (Knoxville): I do not do any eye work, but I am in the office with Dr. Newman, and I want to bear testimony to the statements which he has made in regard to the therapeutic results of this very homely remedy. He often calls me in to show me eye conditions, and I have been interested in it from the standpoint of other infections. His results to me have been most spectacular. I think he has been very conservative in his statements.

The thought has occurred to me that if this protein reaction is working in such a splendid way in ocular infections, why not in others, as the Doctor has brought out. I have only used it in one other type of infection, and I used it on this patient because I thought she was going to die anyway and we were ready to use anything. This was a case of mastoiditis. We thought the woman would die in spite of everything—she had a temperature of 105 degrees, but from the first dose we gave her she began to improve. We still thought she would die within twelve to twenty-four hours, but she continued to improve. Whether the milk caused it or not brings up the old question whether we might not have given water and gotten good results. But from the accumulation of these cases it looks as if the results we are getting in eye cases will certainly justify it being used in other types of infection.

DR. E. C. ELLETT (Memphis): The article that Dr. Watkins referred to was read by Barkan and Nelson at the San Francisco meeting of the American Medical Association, its purpose being a search for the active agent in milk injections. They concluded that the effect is due, first, to bacterial bodies; and second, to bacterial proteins from disintegrating bacteria, or, third, to decomposition products. Injections of certified milk, i. e., milk containing less than 10,000 bacteria to the cubic centimeter, produce little or no results. They were using certified milk without results, but sent out and got some milk from a suburban goat and got results.

There is another interesting thing in connection with this subject. Dr. Novy, of the University of Michigan, who is a pioneer in this sort of work, says that you can get the same reaction with water, which would indicate that it is not a protein reaction at all, but dirt.

The idea of milk injection originated in 1915 at Prague. In 1910 at the Rothschild Foundation in Paris, Dr. Spivelle was using diphtheria antitoxin in the treatment of pneumococcus ulcers of the cornea. The question has been brought up as to how much of the effect of diphtheria antitoxin is due to antitoxin and how much to something else, namely foreign proteins.

I agree fully with all that has been said about the virtue of milk injections. I do not know of any other therapeutic agent that I use with more confidence. I have now under observation a woman about 35 years of age who had a beginning cataract which I attempted to dispose of by needling. She has developed what I take to be endophthalmitis phacoanaphylactica. At any rate she has plastic reaction in this eye, and every time it lights up it can be stopped with an injection of 3 cc. of milk. I have done it several times in the progress of her case, which began about Christmas. I think milk has largely done away with the necessity for subconjunctival injections of cyanide of mercury. The reaction to milk is not very pleasant, although we usually get a temperature of 102 degrees and the constitutional reaction that goes with it.

DR. WALTER S. DOTSON (Lebanon): I think it is well not to let this paper and discussion pass without some word of warning about injections of milk when you have a gonococcus infection of the cornea, or a gonorrheal ulcer. I had not had my attention called to this until last year in Vienna, and in the clinic there they used milk for all inflammatory conditions of the eye with this one exception. The record of one hospital was that every time they gave an injection of milk in a case of gonorrhoeal corneal ulcer, the next morning they had no cornea. There was complete sloughing of the cornea. The method they employ there is a large quantity of milk—they inject from 5 to 10 cc. The milk was sterilized for five minutes and injected as we do here, and I did not notice a great reaction in a number of cases. They had the highest temperatures that I have ever known following the injection of 10 c.c. of milk within a few hours. No other dangerous results noticeable excepting the extremely high temperature. It would last four to six hours, beginning about two hours after the injection of 10 cc. of milk.

With this warning I have been afraid to inject milk unless I was sure that I did not have a gonococcus infection of the cornea.

DR. LUTHER C. PETER (Philadelphia): There seems to be no question but that there is a great difference of opinion about milk injections and as to how they accomplish the work. That they do accomplish it there is no question, although Barkan has thrown some doubt upon it in his recent paper before the American Medical Association.

Doctor Patterson's case recalls to my mind my experience in using tuberculin. When we first began the use of tuberculin the clinicians told us it was never indicated when there was high temperature, and yet in spite of this fact I had the courage to use it in all my cases whether the temperature was running high or not, and curiously enough, instead of doing harm, the temperature invariably dropped. That indicated that it was a foreign protein acting upon the mixed infection which we have in tuberculosis. The temperature is due to mixed infection, and tuberculin acts as a foreign protein. Since the introduction of milk I have analyzed my cases, and I believe that is the explanation. It does not explain how, but it does seem to point to the specific action of a foreign protein rather than to bacteria. Of course that is not proven.

In any new treatment we are apt to let ourselves run away with the new thought and apply it in so many cases in which it should not be used. I have been using milk very extensively, but limit it to infections or injuries about the eye. Whenever a case is brought into the office with injury, before sending it to the hospital we give an injection of 3 cc. of milk. That is, if the patient is over 50; under 50, 5 cc. We increase it 1 cc. a day. As Doctor Newman has pointed out, if you do not get results in six injections, the treatment should be abandoned.

We always take the blood count before and after. Whether the leukocytic count is a factor, I do not know. The highest leukocytic count occurs about the third injection, running to 14,000 to 15,000. It climbs up and then drops. It is an indication that we should not continue the treatment too long. That it is of value there can be no question. It is simply marvelous to see patients clear up after the use of milk injections. Doctor Newman has done us a great favor in bringing this very practical subject before us.

His technique is about the same as the one which we employ. The injection should be made well into the gluteus maximus, not into the subcutaneous tissue. We sterilize the milk for eight minutes, strain it through cheese cloth, and use a needle of large calibre, injecting well into the gluteus maximus. It is not a panacea, but it is a wonderful addition to infective processes.

I have been very much pleased at the reception accorded this paper, which is not elaborate and has not taken up all the experiments which have been made along this line. As to why it accomplishes the result, I do not know, and I do not think anybody else knows at this time. I think we are as much at sea in regard to protein therapy today as when it first started. We only know it does good.

Granting that it is of bacterial origin, granting that it is of an origin we know nothing about, there are no harmful results noted following these

injections, and for that reason I do not see why we should not give it a trial. In some indolent ulcers it is of great advantage along with the instillation of dionin, because in that way you get an increased vascularity around the eye.

In those gonococcus cases that Doctor Dotson mentioned where the cornea was gone, were these eyes bandaged, Doctor?

Dr. Dotson: Yes.

Dr. Newman: If they were bandaged I can see no reason why the cornea was gone. Where I used these injections in gonococcus infections I have had the most marked results. The chemosis vanished and the pain has ceased. If the eyes were bandaged I can see no reason for loss of the cornea.

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## SENSITIZATION—A FACTOR IN CUTANEOUS, RESPIRATORY AND DIGESTIVE DISTURBANCES

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H. C. LONG, M.D., Knoxville

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THE writer has attempted to bring together the generally accepted facts regarding a gradually increasing number of diseases due to sensitization to proteins and chemicals other than proteins in a form that will be of clinical value.

Heretofore little attention has been given to a study of these diseases as a distinct group with a common etiology and relieved or greatly benefited by the same management. The determination and results of the exciting agents will be discussed. First, in a group of skin diseases heretofore classed with eczema and urticaria. Second, in a group of respiratory diseases, colds, hay fever and bronchial asthma. Third, in a group of gastro-intestinal disturbances. A new classification should be made to separate the disturbances due to a hypersensitiveness to proteins and drugs.

The cutaneous manifestations of these disorders have caused them to be classified with the various skin diseases of unknown origin. No doubt a considerable proportion of the so-called cases of eczema and urticaria belong to this group. This is easily proven by the cutaneous tests, showing that there is a hypersensitiveness to certain substances which are being ingested as food, or which are being introduced into the system parenterally.

Pirquet in 1911 was the first to suggest a method for determining the cutaneous

sensitization to proteins. However, Schloss in 1912 was the first to make clinical application of the procedure. He had a patient who was subject to marked urticarial lesions due to the ingestion of eggs, oatmeal and almonds. The history indicated that the hypersensitiveness was acquired when the individual was on a diet free from these substances; he was also free from urticarial attacks. This was one of the first reports of hypersensitiveness to the common food proteins. Blackfan in 1916 found evidence of altered reactivity to proteins in twenty out of twenty-seven patients with eczema whom he tested for hypersensitiveness. When the patients were placed on a diet free or limited in the offending proteins, the eczema was markedly benefited in each case. Engman and Mander, in 1921, found, in a large series, that seventy-eight per cent of children suffering from eczema were hypersensitive to some protein.

The disorder may be brought about by external agents: lice, fleas, gnats, wasps, bees, caterpillars, some plants, as the nettle; and by internal agents as ingested foods, drugs and injected vaccines and sera.

The cutaneous tests must be made in order to determine the offending proteins, although exclusion from the menu of the most probable article, occasionally, will make the tests unnecessary.

Credit is due to the pediatricians for a large amount of the clinical work on hypersensitiveness to foods.

The cause of eczema in breast-fed infants was unknown and treatment unsatisfactory. The opinion of Czerny that eczema in this large group was due to disturbances of the fat metabolism was generally accepted. Finklestein's "salt" theory had some strong adherents, but gained little support from the profession. Disturbances of the internal secretions, especially the thyroid, was advanced as a cause and probably has been a factor in some cases. About three years ago O'Keefe showed that a large per cent of breast-fed infants suffering from eczema gave a positive reaction to some protein in the mother's diet. He suggested that these proteins occurring in the milk were the most probable means of sensitization in this group. About forty per cent of this series were cured by eliminating from the mother's diet the food to which the infants were hypersensitive and that twenty per cent more were definitely benefited.

Shannon demonstrated the presence of egg and veal proteins in breast milk after their ingestion. This work has not been confirmed, but it is reasonable to suppose that if they can reach the blood stream, they may appear in the milk. There is an abundance of clinical evidence that the same is true of almost any food. The cases of so-called exudative diathesis can be shown to be due to various proteins in the mother's milk to which the infants are hypersensitive. The profession has recognized for years that the mothers often ingested articles of food which upset the baby, but nothing definite has been worked out previous to this time to determine the particular article of food causing the trouble. The cause being unknown, treatment was directed at the eruption by external applications, and to the regulation of the fat intake; satisfactory results were not obtained for the reason that the offending agent had not been eliminated. The articles of food to be avoided by the mother or

patient are determined by the cutaneous tests performed on the infants. Where the patient is sensitized to a number of the food proteins (in some cases twenty or more foods give a positive reaction), it may be sufficient to remove two or three showing strongly positive and limit the amount of the others. The hypersensitiveness may be due to only a few articles of food at any one time, but sensitization to new foods may occur and be the cause of exacerbations.

Drs. Hill and Hill have had a series of cases of eczema of the face and scalp in infants during the past two years, which were tested for hypersensitiveness to a number of common food proteins. The proteins in the order of frequency in their cases were egg, tomatoes, oat meal, potatoes, beans and pork.

Internists and dermatologists have great difficulty in differentiating this group. Many additional factors are introduced in searching for the cause of an urticaria or eczema in adults. Exposure to high and low temperatures, chemical and physical agents, focal infections and systemic diseases. The individual, by the time maturity is reached, has acquired a tolerance for a great many proteins to which the infant is hypersensitive. It has been common knowledge that in a large per cent of all cases of eczema and urticaria the successful treatment required a restriction in the amount of certain foods and the complete elimination of other foods. This fact alone would suggest that these patients were hypersensitive to something which they were eating or with which they were coming in contact. Urticaria from eating strawberries is not infrequently a demonstration of hypersensitiveness. It is very probable that all persons are sensitized to some form of protein. When the manifestation of the hypersensitization is a skin eruption, it may be relieved by avoiding or eliminating the agent of altered reactivity.

Due to the long standing chronic condition and complicating factors in adults, the results from eliminating the offending pro-

teins are not so brilliant as in the case of infants. All cases in which the cause is not evident should have cutaneous tests made with the various groups of proteins, including bacterial proteins.

Investigation of the respiratory tract, especially as regards the allergic manifestations of hay fever and chronic asthma, has not progressed to the point of a full understanding of all the processes that are taking place. However, sufficient information has been accumulated to permit a diagnosis and the proper management of this group of respiratory disorders.

Elliotson in 1831 advanced the theory that seasonal attacks of hay fever were due to pollens. C. H. Blackley in 1873 demonstrated the truth of the theory by experimentally producing hay fever with the extract of pollens. Wolff Eisner in 1906 suggested that hay fever was an allergic reaction. And Meltzer in 1910 suggested that bronchial asthma should be considered as a manifestation involving the bronchi.

The agents producing these respiratory disturbances are various proteins of animal and vegetable origin and a great number of chemical substances, as follows: Animal emanations, therapeutic sera, foods, pollens, drugs and perfumes. Depending on their nature, they may be introduced into the body by inhalation, ingestion, absorption and injection.

Cutaneous tests show that the majority of the cases of seasonal coryza are due to sensitization to the wind borne pollens, while all the year types are commonly due to other agents as animal emanations, food and chemicals. Some of these patients complain of frequent "colds" throughout the year, which closely simulate short attacks of hay fever. The early so-called rose fever cases occurring from May to July and the late hay fever occurring from August to October are usually correctly classified as being due to pollens. The pollens of the grasses—timothy, bermuda and red-top in the spring and the flowering plants; ragweed and golden-rod in the autumn in the eastern half of the United States. Sen-

sitization to both early and late pollens is present in about one-third of the cases. Irregular attacks of coryza due to other plants, animal emanations, foods and chemicals are usually classed as "colds."

The diagnosis can be made in ninety per cent of cases of coryza due to hypersensitiveness by the cutaneous tests.

Bronchial asthma is closely correlated with hay fever. The etiological factors are the same, but the percentage due to a particular agent may vary greatly.

Blackley, Richet, Pirquet, Wolff-Eisner, Theobald Smith and more recently, Walker, Cooke, Meltzer, Schloss and many other research workers have established the principles upon which the differentiation of bronchial asthma can be made from bronchitis with dyspnoea.

The observation was made that individuals subject to asthma, when given antitoxin serum, infrequently would have shock and dyspnoea. The phenomena was studied in animals, and it was found that any animal made sensitive to a foreign protein, on receiving a suitable amount of the specific protein, would die of asphyxiation, due to bronchial spasm. Meltzer in 1910 suggested that asthma should be investigated along the same lines as hay fever. Walker in his first series of about one thousand cases found that forty-eight per cent gave positive skin tests. Cooke in two hundred and fifty cases found that eighty-five per cent gave a positive intra-cutaneous test with one or more of the preparations used.

Bronchial asthma has been produced by the injection of pollen extracts, horse serum; exposure to horses, rabbits, cats and dogs has precipitated an attack in susceptible individuals; and the ingestion of the offending food proteins frequently has been followed by an asthmatic attack. Therapeutic injections of the protein in solution have shown that a freedom from any symptoms of the disorder may be established, although the etiological factors were not removed.

The cumulative studies and statistics of many workers have established that asthma

is due to sensitization. However, sensitization must be determined by a positive cutaneous test, or an artificially produced attack on the introduction of the offending substance. Contact with the agent must be shown. When these conditions are fulfilled the diagnosis is made on definite and conclusive facts. The most important part of the examination is to determine if the patient is hypersensitive to the suspected substances.

Bronchial asthma can be separated from asthmatic bronchitis in ninety per cent of the cases by the cutaneous tests. Rarely irritability of the skin prevents a correct interpretation of the reaction. Such complications as eczema, urticaria and hay fever may give positive reactions and make it difficult to differentiate the particular one responsible for the asthma. However, the patient wants relief from these distressing manifestations as well, so that a separation of the exciting agents is of no real value.

In cases of long standing infection may occur and structural changes take place which make a bronchial spasm easily produced by other factors. The relief obtained in these cases by the removal of the hypersensitive agents is not so great.

Gastro intestinal disturbances, due to sensitization to proteins and chemicals, have received scant attention. Experimental work has shown that some sensitized animal will react with pulmonary

symptoms, whereas other species will react with severe intestinal symptoms.

Children frequently vomit following the ingestion of some food which causes a skin reaction or asthmatic attack. No doubt a protective mechanism to spare the individual from gastric disorders.

Schloss records cases of vomiting, diarrhea and fever suggestive of sensitization to food protein. Two patients out of a small group reacted positively to egg. An egg free diet prevented attacks in these cases. Dr. Oliver W. Hill has relieved a number of infants suffering from colic by eliminating from the mother's diet the food proteins with which the babies reacted positively. The writer is indebted to him for case reports which have not been published.

The doctor is often reminded, by the patient suffering from indigestion, that some particular article of diet causes distress. Hypersensitiveness explains most satisfactorily these food idiosyncrasies.

In the study of obscure stomach diseases it is well to keep in mind the possibility of sensitization to some of the foods.

Failures occur in the management of these cases from: (1) A lack of co-operation on the part of the patient or family; (2) Sensitization to such a large number of food proteins that some of them must be used to prescribe a sufficiently liberal diet; (3) Failure to test for the offending protein; (4) Sensitization acquired to new foods; (5) Errors in the interpretation and tests performed during the negative phase.

# THE JOURNAL

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SEPTEMBER, 1924

## OLIN WEST.

The announcement that Dr. Olin West has been elected General Manager of the American Medical Association to succeed Dr. George H. Simmons, who has retired, will be received with no small degree of pride and gratification on the part of the medical profession of Tennessee. It is less than three years since Dr. West joined the executive forces of the A. M. A. and his rise in this short period through the ranks of Field Secretary, Secretary and General Manager has been nothing short of phenomenal. It was freely predicted by Dr. West's friends when he joined the Association's forces that he would attain this, the highest place in the gift of the Board of Trustees; but his most ardent admirers did not dream of it occurring at this early date. In the selection of Dr. West for this important post, the Board of Trustees has made a wise choice and the profession of the country is to be congratulated on having a man of such unsullied character, untiring energy and native ability to direct the business affairs of the Association. Dr. West's numerous friends of the state wish for him a long and successful career in his new position.

## THE LEGISLATIVE COMMITTEE.

Dr. H. H. Shoulders, Chairman of the Committee on Public Health and Legislation, has made the announcement that he will call a meeting of the members of his Committee to be held in Nashville, Wednesday morning, October 15, at 10 A. M. All of the officers of the Association will also be invited to attend as well as the Secretaries of the component county societies.

The object of the meeting will be to formulate a definite policy to be pursued by the Committee during the coming session of the Legislature and to effect a working organization throughout the state.

In making this move Dr. Shoulders has set a splendid example and one which the Chairmen of the other Committees appointed by the President would do well to emulate. It is to be hoped that the members invited to this conference will make it a success, and the only way to make it a success is by lending your presence on the occasion. Matters of vital importance to the whole profession of the state will be before the Legislature during its 1925 session, and it is in anticipation of these problems that the meeting has been called—to the end that they may be freely discussed and ways and means be devised to safeguard the interests of the profession.

## REDUCTION IN REPRESENTATION.

Official advice has been received at the Secretary's office that our representation in the House of Delegates of the American Medical Association has been cut from three to two. It is explained that this cut was due to a re-apportionment of delegates to membership and that the re-apportionment was necessary in order to keep the number in the House of Delegates within constitutional limits. It is not known whether the number now prescribed in the constitution is just the right number to efficiently carry on the business delegated to that body, but if the precedent so well established by the constitution of our government was followed; as numbers increased, representation kept pace. It would have been entirely possible, and perhaps wiser, to amend the constitution and thereby allow a more representative House of Delegates. Under the present "re-apportionment" it will be a long time before Tennessee can even entertain the hope that the former representation will be restored. And it may be that when the time does arrive there will be another "re-apportionment."

## SECTIONAL SOCIETIES.

In this issue of the Journal will be found notices of meetings of three sectional societies, the Walnut Log Medical Society, the East Tennessee Medical Society and the Middle Tennessee Medical Society. The Walnut Log Society is somewhat unique in that it meets at the same place each year in the well known hotel, located on Reelfoot Lake, from which it takes its name. It includes in its membership physicians residing in the Kentucky counties adjacent to the lake. While this society is just a few years old, through the energies of Dr. Ira Park, its Secretary, it has become one of the most popular sectional societies of the state.

The East Tennessee Medical Society and the Middle Tennessee Medical Society are so old that memory runneth not to the contrary. Dr. G. Victor Williams, Secretary of the East Tennessee organization, and, parenthetically secretary of about every organization to which he belongs, has kept it on a very high scientific plane. He writes that the Harriman meeting will be among the best, if not the best in its history. Dr. Sam P. Bailey, Secretary of the Middle Tennessee Medical Society, though young in the business of being Secretary, put on the best meeting in the history of his society when it met in Columbia in the spring. Lewisburg will be just as good or even better, he says.

You will be a better doctor and you will come nearer understanding your professional confere's point of view if you attend these societies.

**NEWS NOTES AND COMMENT**

Dr. Elmer Claiborne has located in Knoxville.

Dr. W. O. Brickwell of Friendsville has moved to Alcoa.

Dr. R. P. Oppenhimer is spending a vacation in Richmond, Va.

Dr. E. Feldman, recently of Gary, Ind., has located in Hollywood, Tenn.

Dr. Herbert Acuff has returned to Knoxville after an extensive trip to California.

Dr. S. H. McCrary has resigned as Superintendent of the Knoxville General Hospital.

Dr. R. L. Dossett has reopened his offices in Tullahoma, having spent several months in Chattanooga.

And so it develops that a Ph. D. degree is at least desirable, if not necessary, to teach medicine.

Dr. C. A. Forgey of Columbia sustained a broken rib and other minor injuries in an automobile accident September 5.

Dr. Percy H. Wood of Memphis announces the removal of his office to suite 1218-24 Columbian Mutual Tower.

Dr. Walter Luttrell has returned to Knoxville after several weeks visit of the hospitals in Boston and New York.

Dr. Max Goltman and his son, Dr. Alfred M. Goltman, have opened The Goltman Clinic at 995 Madison Ave., Memphis.

Dr. R. L. Witherington of Trimble has located in Paris, where he will limit his practice to Eye, Ear, Nose and Throat.

Dr. E. C. Mason has moved from Knoxville to Russellville, Ark., where he will be connected with the United States Trachoma Hospital.

Dr. Omar E. Smith announces that he is no longer associated with Dr. Henry G. Rudner Clinic and has opened offices at 2146 Young Avenue, Memphis, for the general practice of medicine.

The new Methodist Hospital of Memphis was formally opened September 16. The hospital is located on Union Avenue in a graced plot of four and one-half acres. The building is of red mat brick, stone and terra cotta construction and is furnished with every modern appliance for the care of the sick.

The eleventh annual meeting of the Chattanooga Clinical Congress was held in Chattanooga September 26. Clinics were held at the various hospitals and a scientific program was held in the evening, preceded by a banquet. A large gathering of the doctors of the Chattanooga district was present. The meeting was held under the auspices of the Chattanooga and Hamilton County Medical Society.

Dr. George A. Hatcher, for the past ten years first assistant to Dr. W. Scott Farmer of the Central State Hospital, has resigned, effective October 1. Dr. Robert H. Elrod, third assistant, has also resigned. Dr. Hatcher goes to the Manhattan Eye, Ear, Nose and Throat Hospital and Dr. Elrod goes to the University of Pennsylvania for post graduate work.

During the recent illness and death of Calvin Coolidge, Jr., son of our President, Dr. Frank D. Smythe, President of our Association, sent the following message of condolence to President and Mrs. Coolidge: "President and Mrs. Calvin Coolidge, Washington, D. C.

In this hour of your great sorrow, incident to the serious illness of your son, Calvin, Jr., the medical profession of Tennessee extends profound sympathy and hopes that his life may be spared and that his activities may reflect additional honor upon the name of his distinguished father and his noble mother—the First Lady of our land.

(Signed) FRANK D. SMYTHE,

President, Tennessee State Medical Association."

After the young gentleman's death, Dr.

Smythe received a card from the President and Mrs. Coolidge which said:

"The President and Mrs. Coolidge are deeply grateful to you for the expression of your sympathy for them."

There is increasing evidence that the secretaries of the component county societies are seeing the wisdom of publishing a notice of their meetings in the local newspapers—and a report of the meeting with a list of those in attendance after the meeting together with a note on the topics under discussion. If you are skeptical about this, Mr. Secretary, try it for a few months. And this is not "advertising"—nor is it unethical. It will increase the attendance at your meetings and it will let the people know who are the up-to-date physicians of your community. The people know that medical societies are for the mutual benefit of the profession and they want to have an up-to-date physician.

## MEDICAL SOCIETIES

The next regular meeting of the East Tennessee Medical Association will be held October 9th and 10th, at Harriman.

This is your society; its future depends on you, and we are expecting to see you there.

We must have enough papers to fill the program the entire time; and if you will read a paper, please mail me the title, and then get busy and write it.

Two dollars dues will be collected from each member present.

Hoping to see you at Harriman, October 9th and 10th, I am

G. VICTOR WILLIAMS,  
Secretary-Treasurer, Chattanooga.

## THIRD ANNUAL MEETING OF WALNUT LOG MEDICAL SOCIETY

The Walnut Log Medical Society will hold its third annual meeting, October 1st and 2nd, at Reelfoot Lake.

A strong program will be given by leading members of the profession.

It is the purpose of this society to combine scientific inspiration and social recreation into a worth-while outing for the busy physician. Fishing, boating, musical entertainment and a menu of all kinds of game makes this a meeting that you cannot afford to miss.

IRA PARK, *Secretary*.

Union City, Tenn.

The Middle Tennessee Medical Association holds its sixtieth semi-annual meeting in Lewisburg on November 13 and 14. The officers for the fall meeting are: Dr. H. H. Shoulders, Nashville, President; Dr. J. C. Kelton, Lascassas, Vice-President; and Dr. Sam P. Bailey, Nashville, Secretary-Treasurer. The doctors of Middle Tennessee are vitally interested in the Association; this was recently shown by the splendid spring meeting in Columbia.

The Association is particularly fortunate in having Lewisburg for a meeting place. Lewisburg, capital of Marshall County, is a thriving city of over three thousand. It is centrally located, is easily accessible by automobile, and is at the intersection of the Nashville, Chattanooga and St. Louis railroad and the main north and south line of the Louisville and Nashville railroad.

The doctors of Tennessee are cordially invited to attend the Lewisburg meeting and take part in the program.

## MISCELLANEOUS

In our laboratory, the following cause for an apparently unexplainable rise in leucocyte count was observed.

This was found to be due to a minute subcutaneous infection at the point of puncture.

The patient, during an attack of appendicitis, having had repeated punctures, the last count showing resolution, had no further counts made for ten days.

On this day the blood count showed a leucocytosis of 24,000. There being no ob-

jective symptoms to corroborate this, investigation was made, and on careful examination at point of puncture, a minute subcutaneous infection, too small to produce discomfort, was revealed.

A puncture in another finger gave a normal count.

Possibly this has been a source of error to other technicians, especially where frequent punctures have been made. Careful examination at the point of puncture may avert erroneous reports.

M. MIESCH, *Technician*.

Western State Hospital, Bolivar, Tenn.

## CAMPBOR IN OIL IN HEART FAILURE

Marvin and Soifer have studied the effects of camphor in oil as a cardiac stimulant. They failed to secure evidence of any action on heart rate, respiration, blood pressure, vital capacity or the general clinical condition in which digitalis is frequently promptly effective. Henceforth the burden of proof that camphor in oil has a rational place in the treatment of congestive heart failure rests with its advocates. All others may well hesitate to place their trust in a drug that seems to have given more promises than therapeutic performances. (Jour. A. M. A., August 2, 1924, p. 362.)

## THE THERAPEUTIC USE OF DIGITALIS

The Council on Pharmacy and Chemistry has long held that digitalis effects can be obtained satisfactorily in most instances by the oral administration of digitalis itself, the tincture or the infusion, and that the intravenous administration of digitalis preparations is rarely necessary. However, investigation indicates that digitalis preparations are administered intravenously far more frequently than seems to be demanded. Because of the importance of digitalis therapy, the Council decided to appoint a committee composed of men who have made a study of questions concerning the administration of digitalis, and to request this committee to prepare a report

for publication which would set forth concisely the limitations of digitalis therapy and the methods of obtaining digitalis effects. At the request of the Council, Drs. G. Canby Robinson, Paul D. White, Cary Eggleston and Robert A. Hatcher prepared a report. This report brings out the indications for the use of digitalis, the limitations of the drug, its dosage and method of administration. It discusses at considerable length the conditions where the intravenous and intramuscular administration of digitalis may be called for and when the oral administration will be found satisfactory. The report concludes with the statement that the oral administration of digitalis in the form of the standardized powdered leaf, infusion or tincture, meets every requirement of digitalis therapy, with the exception of those relatively infrequent cases in which immediate relief is imperatively demanded, or when nausea or vomiting precluded the oral method, and outlines the intravenous, intramuscular or rectal administration of digitalis bodies when the threatening condition of the patient demands immediate relief. (Jour. A. M. A., August 16, 1924, p. 504.)

## BOOKS RECEIVED

**PATHOLOGICAL TECHNIQUE.** New (8th) edition. A Practical Manual for Workers in Pathological Histology and Bacteriology, including directions for the performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank B. Mallory, M.D., Pathologist to the Boston City Hospital, and James B. W. Wright, Pathologist to the Massachusetts General Hospital and Assistant Professor of Pathology, Harvard Medical School. Eighth edition, revised and enlarged. Octavo of 666 pages with 180 illustrations. W. B. Saunders Company, Philadelphia and London. 1924. Cloth. \$6.50 net.

This work is so well and favorably known that the new (eighth) edition is certain to be accorded the same popular reception that has made its predecessors the standard working manual in their field. It is a comprehensive yet concise guide to the technical aspects of histology, bacteriology, parasitology, hematology, serology and post-mortem examinations.

The general appearance of the book has been considerably modified in the new edition; it has been reduced somewhat to about handbook size, a noteworthy convenience in a work which is to invite frequent consultation. The general arrangement of the work and its subdivision into its various topics remains the same; much new matter has been incorporated, but on the whole it is the same old time-proven Mallory and Wright, model 1924.

The book is recommended as without a peer in its field. To technical workers and students of histopathology and bacteriology no commendation other than mention is necessary. R. C. D.

**A CLINICAL GUIDE TO BEDSIDE EXAMINATION.** By Dr. H. Elias, Dozent and Assistant at the First Medical Clinic of the University of Vienna, Austria; Dr. N. Jagic, Extraordinary Professor and Chief Physician to the Sofienspital, Vienna, Austria; Dr. A. Luger, Dozent and Assistant at the Second Medical Clinic of the University of Vienna, Austria. Arranged and translated by Wm. A. Brams, M.D., Chicago, Ill. Cloth. Price, \$1.50. Pp. 135. New York: Rebman Company. 1923.

This manual furnishes the physician and student with a guide for the physical examination of a patient at the bedside. It presents a wealth of information in an abbreviated form. It also offers a nomenclature which may facilitate the recording and interpretation of history charts and reports of the results of the physical examination.

S. P. B.

**DISEASES OF THE EYE.** New (tenth) edition. A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. de Schweinitz, M.D., LL.D., Professor of Ophthalmology in the University of Pennsylvania. Tenth edition. Reset. Octavo of 865 pages, with 434 illustrations and seven colored plates. Philadelphia and London: W. B. Saunders Company. 1924. Cloth. \$10.00 net.

The new tenth edition of this standard work in ophthalmology is revised to date as to include what newer advances have found definite places in its particular field as well as improved in other respects. The fact that this text made its first appearance in 1892 and has since passed through numerous revisions and editions is sufficient to testify to the high position of esteem and authority that it commands. As a standard text, and of sufficiently comprehensive scope to give it value as a work of reference as well, the new edition is recommended, not only to the students and practitioners of ophthalmology for whose use it is intended, but to the more general medical reader and student as well. R. C. D.

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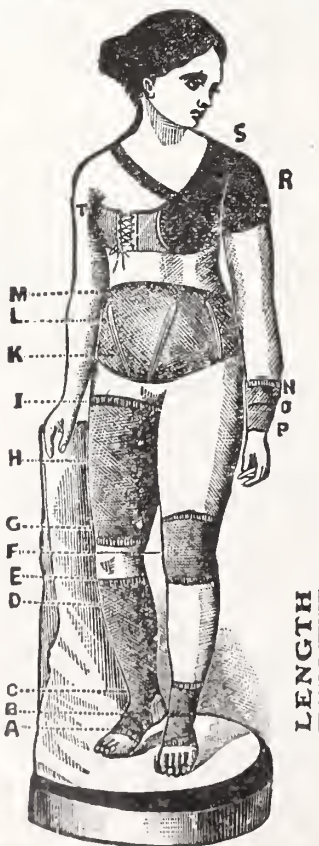
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## THE TREATMENT OF RENAL AND URETERAL STONES\*

O. S. McCOWN, M.D., F.A.C.S., MEMPHIS.

THE treatment of kidney stones is essentially operative. The presence of a stone in the kidney is not of itself an indication for operation, but all those that give symptoms, and those accompanied by active infection should be removed. This means that most of those that are diagnosed should be removed because the patients do not consult the surgeon unless they have symptoms. It occasionally happens that the symptoms which cause the patient to undergo examination are due to some other cause and the kidney stone is discovered in the routine examination. Such stones should be left alone if the surgeon is convinced that the symptoms are due to some other cause, and that there is no active kidney damage going on.

There may be special contraindications to operation, as old age with mild symptoms, or the condition of the patient may be such as to render operation too hazardous. Common sense would dictate that operation should not be done in such cases.

All kidney operations should be preceded by a few days of preparatory treatment. This consists chiefly in the free drinking of distilled water, as much as three quarts a day in addition to the fluids taken at meal times.

There are two types of operation, pyelotomy and nephrotomy. The main idea is to free the kidney from stones with as little trauma as possible. For this reason pyelotomy is the operation of choice. Wounds in the pelvis heal well unless the normal drainage through the ureter is obstructed. Investigation for such obstruction should be a part of the preliminary diagnostic work, and its relief, if present, is a necessary part of the treatment of kidney stone. This treatment may consist of the cutting of an aberrant blood vessel to the lower pole of the kidney which may constrict the ureter, the dilatation of a strictured ureter, or the removal of an abdominal tumor which may compress the ureter from without.

The pyelotomy wound should be sutured with chromic catgut and the fatty fascial flap sutured over this to reinforce the suture line as recommended by W. J. Mayo. This is the same in principle as applying a bit of omentum to a line of sutures in the intestinal wall.

A soft rubber tube or wick of folded rubber tissue *without gauze* should be used as a drain. Most cases of pyelotomy will heal without any leakage whatever.

In cases of very large branched stone, as I will show on the slide, or where the stone is in the kidney substance or at the point of a calyx, nephrotomy is necessary.

\*Read before the Tri-State Medical Association Miss., Ark. and Tenn. Nov. 20-21-22, 1923.

It was at one time customary to split the kidney from pole to pole, but the excellent x-ray work of the present day, combined

by the use of silver wire as advocated by Cullen and Derge. I have usually found the knife preferable, because a shorter incision



FIGURE 1

Five stones in left kidney pelvis and kidney substances, large branched stone completely filling right kidney pelvis, in a woman aged 42, who had been operated on in February, 1918, for appendicitis without relief. Stones removed from left kidney by nephrotomy on July 28, 1918, and from right August 12, 1923. Good operative recovery. No recurrence, and patient well to date (November 20, 1923).

with cystoscopy, shows the complete kidney outline and enables us to determine accurately in what part of the kidney the stone lies, and often makes it possible to remove the stone through a very small incision to the kidney substance. Occasionally the kidney can be opened to advantage



FIGURE 2

Single stone in lower pole left kidney in a woman 40 years of age, removed by nephrotomy October 10, 1920. No recurrence, and patient remains well to date (November 20, 1923).



FIGURE 3

Large stone in right lower ureter in a woman aged 20, with symptoms dating back six years. Passed after dilating lower ureter with bougies and mechanical dilator.

can be used, and the stone approached in a more accurate manner.

The kidney should be sutured with mattress sutures of chromic gut and the cap-



FIGURE 4

Stone in lower left ureter of a man age 60 who had suffered from attacks of pain in the left abdomen for 25 years. Picture shows catheter passed beyond stone and ureter dilated. Ureter injected with 20% sodium bromide. Stone worked out by bougies and dilators.

sule by a running suture of the same material, No. 0.

The same drainage should be used as in pyelotomy.

Good exposure is necessary in any kidney operation. I usually use the oblique lumbar incision, and find that removal of the twelfth rib helps in getting to the kidneys, which are high and have short pedicles. This incision can be extended forward and downward so as to allow exposure of the ureter, if necessary. I usually close with double No. 1 chromic gut in two layers, the first interrupted and the second continuous. The skin is closed with a running suture of plain catgut.



FIGURE 5

Stone in lower ureter in a woman aged 32, worked into bladder by the use of bougies, Bransford Lewis dilator and Walther ureteral sound.

Stones in the ureter present a different problem; a great many ureteral stones will pass spontaneously, and it is proper to give opium for relief of pain and wait as much as a week or ten days to see if this will happen unless the urinary output is diminished considerably or there is active infection in the kidney and ureter above the obstructing stone. Either of these complications makes the prompt removal of the stone imperative. Most of the cases I get have already had ample time for spontaneous evacuation of the stone to have taken place, but in which it is still retained. Nearly all of

these stones can be gotten out by cystoscopic manipulation.

The manipulations I have used consist of the introduction into the ureter of catheters and bougies for the purpose of dislodging a stone and changing its position, and for the dilatation of the ureter. I always inject one or two C Cs of sterile mineral oil while I have the catheter in the ureter. If ordinary catheters and bougies do not bring results I often use the metal bougies, Walthers or Livermores, one or both. These metal bougies are stiffer and will sometimes loosen a stone which is attached to the wall of the ureter that the ordinary catheter or bougie will not move. Sometimes the olive

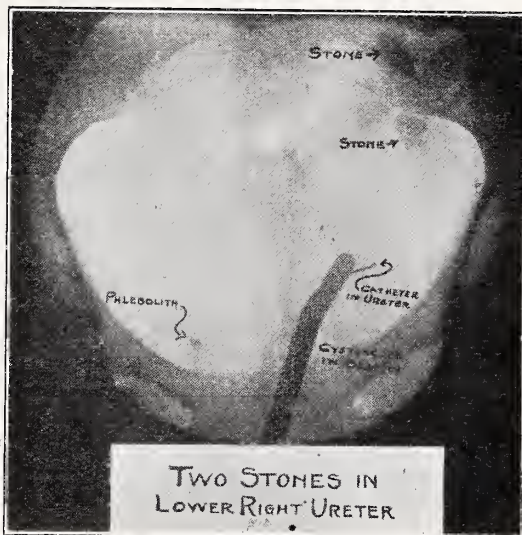


FIGURE 6

Two stones in the lower right ureter in a woman aged, 22, removed by extra-peritoneal nephrotomy, July, 1916. Operative recovery uneventful and well for six months, but no recent report.

on the metal bougie will pass the stone and make considerable pull as it is withdrawn. They must be used with caution, especially the Livermore instrument, as it has a sharp shoulder which might tear the ureter.

The Bransford Lewis dilator is a very valuable aid in such cases and occasionally incising the ureteral orifice with scissors will make room for a stone lodged low down to pass.

I have never done any good by trying to pull a stone out of the ureter with forceps. It is conceivable that a stone almost ready

to drop into the bladder, yet hanging firmly at the ureteral orifice, could be pulled into the bladder with forceps, but so far I have not had such a case.

The olive-tipped electrode of Leo Buerger will loosen some stones that resist other means. The olives range in size from No. 12 French to No. 20 French, and of course a preliminary dilatation of the ureter is necessary before they can be introduced. They make good dilators and the largest size that can be gotten into the ureter should be used. The olive is carried up to the stone and either the unipolar or bipolar high frequency current turned on, taking care not to use enough to burn the ureter.

In case of failure after a patient and painstaking trial a ureterotomy should be done, extraperitoneally if possible. I have had twenty-three cases in which I was able to work the stone out of the ureter by cystoscopic methods, and have had two requiring ureterotomy.

The contraindications to the handling of stone cases by cystoscopic methods are: (1) Active infection in the kidney and ureter above the stone, making haste imperative; (2) intolerance on the part of the bladder to instrumentation; (3) bilateral stones causing obstruction and suppression; (4) obstructing stone in a patient with only one kidney.

It is hardly necessary to mention the fact that a patulous urethra is a prime requisite to the use of the operating cystoscope. In case of stricture of the urethra it is necessary to get rid of the stricture before any cystoscopic work can be done satisfactorily.

The accompanying cuts illustrate some of the cases of kidney and ureter stones handled by me as outlined in this paper.

(1) Cullen, E. K., and Derge, H. F., *Johns Hopkins Bulletin*, 1909, xx, 350.

(2) Mayo, W. J., "The Fatty Fascial Flap in Plastic and Other Operations on the Pelvis of the Kidney," *Surg. Gyn. and Obs.*, 1910, x, 363-365.

(3) Mayo, W. J., "The Incision for Lumbar Exposure of the Kidney," *Annals of Surgery*, 1912, lv., 63-65.

## THE PREVENTION OF HEART DISEASE\*

W. H. WITT, M.D., Nashville

THIS paper will not deal in statistics except to the most limited degree.

Not that I do not have great respect for statistics, but I hope to be able to make clear the matter in hand without calling on numbers and percentages to help me out.

No one will deny the very great prevalence of disease of the heart; no one will deny the very great need of an enduring heart when a patient is attacked with some infectious disease. In practice, we are quite right in considering diseases of the heart per se in which we have a right to fear that without other incidence of disease the patient may succumb. We are also quite right in recognizing another group not very likely to die of heart failure except as called upon to bear an extra burden incident to some foreign pathology. As our patient declines to the plane of the slippered pantaloons and limits his muscular activities to walking to and from the village post office, we usually have no great fear that he will go out by heart failure, unless through pneumonia, influenza, fracture of hip, or some other similar trouble. That extra strain befalls him and proves too much. The cardiopath proper must not only be guarded from infection, but from overeating, anger, muscular strain, etc. On the other hand, one with simply a heart of limited potentiality needs to be chiefly guarded against infection or similar unusual load. The latter has reference chiefly guarded against infection or similar turely old, the obese, the indolent or the very sedentary. While these hearts, if subjected to anatomical examination, might show no great or constant variation from the normal, we know full well that only a

little extra burden is required for their exhaustion.

The very great prevalence of organic heart disease is sufficient excuse for discussing whether and by what means something can be done to lessen the incidence, having in mind both its disabling and its mortality possibilities. Before any disease can be studied from the standpoint of prevention it is well to have the best idea possible as to its cause or causes. So with disease of the heart.

It is probably fair to say that most clinicians nowadays follow rather closely the classification laid down by Dr. Cabot. I am not sure that Dr. Cabot originated the classification, but he has done much to popularize it, and it is fairly workable. The classification has led to a more satisfactory method of taking the history of a cardiopath, a better correlation of other attendant pathology, and a more satisfactory prognosis and treatment.

Dr. Cabot enumerates the causes of heart disease as follows:

(1) The so-called rheumatic or streptococcic group, having in mind that strain of streptococcus that gives us acute rheumatic fever, attacks of localized myositis, chorea and all having a more or less definite association with tonsilitis. I am aware that the specificity of the rheumatic streptococcus and the entity of acute rheumatic fever is debatable, also that this disease is not absolutely differentiable from more subacute or even the more chronic arthritides, but it makes for clearness, to me at least, to so regard it. There is much to be said for such an organism as the causative agent of an acute multiple arthritis, skipping from joint to joint, of rather indefinite duration, getting entirely well, liable to recurrence, and with a mark-

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

ed tendency to be associated with sore throat, endocarditis, and myocarditis, and less often a pericarditis, and not infrequently a chorea. This disease, too, is recognized as being much more common in childhood and early adult life. The younger the patient, the more likelihood of recurrences and the greater likelihood of heart complications. It is in this type of heart disease that the valvular features are so prominent; and while it is the order of the day to minimize the importance of purely valvular defects and their phenomena, I think we shall make a great mistake if we teach our young men to practically ignore cardiac murmurs and thrills. That infectious organisms—probably streptococcus—in various foci and with no tendency to cause arthritis of the type referred to—nor chorea and very little tendency to cause pericarditis may cause a myocarditis is everywhere accepted, but lacks that definite demonstrable sequence that we see in rheumatic fever.

How large a percentage of the cardiopaths in a community is of the streptococcic group varies much. It is much more common in the British isles than in America. According to Cabot, of 600 clinical cases studied in the Massachusetts General Hospital, between 1910 and 1914, forty-six per cent were of streptococcic origin. Of 216 autopsied cases at an earlier date, forty-two per cent were of this nature. These were cardiopaths of all ages. If similar groups under forty years of age were studied, a much larger per cent would be found; and of a group under twenty years of age, doubtless ninety-five per cent would connect their heart pathology with some form of rheumatic attack—arthritis, myositis, or chorea. The fleeting but definite attacks are only less important than those that are more disabling and more easily unearthed in securing a history.

The second group, also of infectious origin is the luetic group—twelve per cent of the 600 cases studied by Cabot. This seems quite large to me, even at the present time when the rheumatic type seems less preva-

lent than a few years ago. In another group studied by Cabot, only five per cent were luetic, which seems to me nearer the proper proportion. I should hold that no cardiopath should be adjudged syphilitic unless there is a definite history or a positive Wassermann and with strong local evidence of being due to the treponema—such as the presence of an aortitis, or an aortic valvulitis that gives every evidence, history included, of not being of rheumatic origin. Most of these cases are found in men in middle life. The recent development of heart symptoms and the aortic location of the physical signs usually at once suggest a luetic origin. I think it rather rare that cardiac breakdown of patients of sixty years and over can be traced to syphilis.

The third large group of crippled hearts is the arteriosclerotic. The pathology lies primarily in the vessel walls and in the majority of cases signs of vascular change can be found in superficial arteries or in those of the retina. They are found in middle or late life—rarely in early life. If in middle life there will probably be a precedent high tension which no doubt stands in a causal relation to the vascular changes. I am referring here to cases of essential hypertension, and so far as we know not associated with nephritis. In these cases the heart has not only to work against unusual resistance, but in time carries its own undoing by virtue of degenerative changes in the coronary vessels. Hypertrophy and dilatation and the symptoms of decompensation are the natural result of such a condition.

In later years and in any prematurely old, the vascular changes may not be associated with high tension—usually are not. How far the changes may be due to infection, how far to that vague process we call age, no one can tell. In fact, in late middle life there is probably a good number of cardiopaths that owe their status not so much to degenerative changes growing out of diseased vessels as to a low-grade infection attacking the heart mus-

cles. There is a good deal of clinical evidence that bad teeth and infected gall bladders, probably also chronic bronchitis and bronchiectasis slowly cripple the heart, and perhaps more by direct attack on the muscle than through the medium of coronary vessel changes. No doubt heavy eating and an indolent mode of life with constipation have some etiologic significance.

The fourth large group is the nephritic—furnishing nineteen per cent of Cabot's 600 cases. In that number of cases it appeared that the cardiac failure was directly sequential to nephritis. I shall not dwell on the difficulty of, at times, analyzing as to which condition is primary. A careful history with functional kidney tests and blood urea estimations will usually suffice, but in a few several weeks' observation will be required. Their importance here is that these patients become more heart than kidney cases and need treatment as such.

According to Dr. Cabot, these four groups—the rheumatic, syphilitic, nephritic and arterio-sclerotic—comprise ninety per cent of cardiopaths. I am not so sure of this if we assign to a separate group the influenzal cases and those due to chronic foci of infection, such as teeth and gall bladder. Of the others, the thyroid group is probably the largest. I purposely omit so-called septic endocarditis, which is essentially not a heart disease, but a general bacteremia with cardiac manifestations.

Given these causes of heart disease, what can be done to lessen their incidence? It will be at once apparent that on the family physician—and this specimen of the genus homo is not extinct yet—will devolve the task of meeting this obligation. The matter is such an individual one that only the doctor who is in immediate contact with the patient is in a position to institute preventive measures. There are, however, two public agencies that will be able to render very material assistance. The inspection of school children, when carefully and periodically done, will, I am sure, go far to discover those children who have diseased tonsils, adenoids and bad teeth. In

addition, not a few cases of heart disease will be detected and therapeutic or conserving measures be advised. The other public agency that will be worth while is that for venereal control. The very stress that is being laid on the seriousness of venereal disease is going to result in more thorough treatment, and in so far as syphilis is thoroughly treated there will be a lessening of heart trouble from that source. Ignorance and an easy way of taking things will materially affect what might otherwise lead to great results.

In the prevention of the rheumatic heart a few basic principles may be laid down. (1) Every child that has rheumatic fever, myositis, fleeting joint pains or chorea or recurrent tonsillitis is potentially a heart case and prompt steps must be taken to prevent recurrences of those infections and thereby prevent endocarditis. In this day and time no child should be allowed to have but one attack of arthritis before instituting efforts at prevention of a recurrence. Tonsillectomy and such other measures as may be needed to bring throat and sinuses to health should be instituted. I think we already recognize that rheumatism in children and young adults is less common than it was fifteen years ago. I feel sure this is due to both the intelligent and unintelligent removal of tonsils. Of course all infectious diseases have their cycles of varying frequency, but I am not inclined to think that rheumatism is on the decline on such account.

In older people whose heart pathology is supposed to come from abscessed teeth, gall bladder or other infection, we are not on such sure ground, but sure enough to warrant every reasonable effort to eradicate those infections as early as they may be detected. At such an age—bordering on the degenerative period—not as good results can be anticipated. It is clear that in the young we must expect to get our best results. The heart of a child may appear badly crippled with valvular and of course some myocardial pathology; but if a reinfection can be guarded against that heart

may improve wonderfully. Even cases of mitral stenosis, that we were taught to look upon with such dread a few years ago, may become almost perfectly functioning hearts if the patient is wise enough not to overstrain his heart—to live within his cardiac means. I have great confidence that twenty years from now the rheumatic heart of children and young adults will be much less common than now.

The incidence of the syphilitic heart, aortitis and aneurism will depend almost entirely on the thoroughness with which that disease is treated, for I am of the opinion that syphilis itself will remain about as common as now. When the aorta and the coronaries are crippled by syphilis, the value of treatment is not great. It is pertinent to remark here that physicians who specialize in syphilis should thoroughly acquaint themselves with the manifestations of that disease in the cardiovascular system and in the nervous system.

The prevention of heart complications of nephritic origin is commensurate with our ability to prevent nephritis and to treat nephritis. I shall not dwell on either of these points except to say that we are woefully unprepared either to prevent or to satisfactorily treat this very common disease. Sensible living in its broadest sense will come about as near being both a preventive and a treatment as more elaborate line of procedure.

The same may be said of the cases of heart disease growing out of generalized or localized arterial disease. Whatever hygienic measures will serve to prevent es-

sential high blood pressure will ipso facto relieve a strain upon a heart probably itself supplied by sclerosed vessels. Whatever will tend to prevent disease of the coronary arteries—separately or as a part of general arterial disease—will tend to save the heart. In a sense this is the same as deferring old age. Arterial change comes with years—as snow comes with winter. In a sense it is old age—coming in some, of course, sooner than in others. “It comes not so much by the sweat that gathers on the brow of toil as by the worry and strain that are hidden beneath the brow of those that work more with the brain than with the muscles.” If mankind will learn to work well, play well, and sleep well, and do these not only in due proportion, but joyously, a larger percentage would live to drift out by a process of general decay or be carried off by the old man’s friend, pneumonia, and a smaller proportion than now would leap into the great beyond in the sixth decade or in the fifth decade. I do not hold out that putting these thoughts into practice would startle the world as has the conquest of yellow fever, the cholera and smallpox, but the result will gradually show in our vital statistics and in the lack of morbidity and invalidism among the people. And all the more to the credit of the practicing physician because it will have been his work, and one effected by a sympathetic and persistent application of a few facts, but none the less a triumph of science and a triumph of that spirit in our own profession that exalts the prevention of disease to a higher position than its cure.

## THE MANAGEMENT OF HEART CONDITIONS IN CHILDREN\*

JOHN T. BARBEE, M.D., Knoxville

I wish I were eloquent enough to pay a fitting eulogy to the heart and its importance to the human body!

Our admiration is always stirred as we look upon the strong old man of eighty, who has a good heart which goes proudly on pumping blood to all parts of his body and defying decay. Contrast him with that pale and weak little fellow who hangs about the play ground unable to join in with his fellows in normal sports, and doomed within a few years to have to give up life's struggle, because of organic heart disease, or remain a cripple, limited in his endeavor.

The child's heart differs from the adult in physiological action and anatomical facts, and associate causes, some of which are as follows: (1) A more highly organized sympathetic nervous control, effecting more easily the rhythmic contractility and the inhibitory function. (2) A more rapid pulse rate.

"The average pulse-rate at birth is 136, and is usually somewhat faster in the female infant. For later periods of life McKee and Wells gives the following figures:

Six to twelve months, 105 to 115 a minute.

Two to six years, 90 to 105 a minute.

Seven to ten years, 80 to 90 a minute.

Eleven to fourteen years, 75 to 85 a minute.

Very wide variations from these average rates may result, however, from most trivial causes. (3) A more active lymphatic system, especially in the throat and nose, with proportionately larger tonsils and adenoids. (4) A greater accessibility to infections, both general, and to the infections which associate with and follow those acute

eruption diseases which are peculiar to childhood and other diseases which occur more often in that period of life. (5) Children's teeth are subjected to rapid decay and make foci of infection. (6) The child is subject to more intestinal infections and metabolic disturbances. (7) the child's heart valves are much thinner and more delicate than an adult's, and are more easily crumpled and damaged by inflammatory action.

It is not the purpose of this paper to discuss congenital diseases of the heart but those acquired after birth. However, it might be well to differentiate the two, and in doing so I will quote Holt:

"Congenital disease may be suspected if the patient is under two years old; if there is no history of previous rheumatism; if the murmur is typical at the base or over the body of the heart and if there is a very loud murmur at the base, or over the body of the heart, and if there is evidence of enlargement of the right heart. If cyanosis and clubbing of the fingers are present the diagnosis is almost certain to be congenital."

Routine, physical examination should always be made during disease and the heart watched carefully afterward.

The heart lies superficially in the young subject, but so rapid is the action, and so frequent are the variations in rhythm that a satisfactory examination may be extremely difficult. Sleep may furnish the best time to secure it in the infant or neurotic child." (McKee and Wells.)

In palpating remember that we are studying a circulation and not merely a heart.

"The second sound up to the twentieth year is always louder on lying down because the heart is then nearer the surface.

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

#### THE IMPORTANCE OF PHYSICAL SIGNS OTHER THAN MURMURS IN THE DIAGNOSIS OF VALVULAR DISEASE OF THE HEART.

"Text-books teach that an endocardial murmur is not always an evidence of a valvular lesion, and also that valvular defect may exist and still no murmur be present. Hamill and Le Boutellier and others have shown that inorganic murmurs are rather common in childhood, despite many statements to the contrary. There may be valvular or muscular diseases without a distinct murmur being audible, and therefore other signs than murmur must be used in determining the existence of valvular lesion.

We can almost say with Walsh that "the diagnosis of cardiac disease by cardiac murmurs is a relic of a bygone century."

Error in calling an inorganic murmur organic is readily made unless the secondary sounds are carefully sought for. We must not undervalue the importance of endocardial murmurs, but bear in mind that it is only by the complexus of symptoms that an accurate diagnosis can be made. McKee says, "Of all the evidence of heart disease, the least valuable is the endocardial murmur." This I do not believe to be true.

Reduplication of the heart sounds, in consequence of the valves of the two sides not closing exactly together, is not uncommon in children, and may be due simply to excitement." (Holt.) Sinus arrhythmia, often found in children, is confusing to many, but with the use of the electric cardiograph differentiation from organic heart disease can readily be made, thereby relieving any doubt. It is usually a phenomenon (respiratory) of health and when of sinus origin may be disregarded safely. The common sinus irregularities should not be allowed to influence the habits of those children who exhibit them; they neither suggest, nor require special therapy." (Thos. Lewis.)

The poly-graph and electro-cardiograph are the latest mechanical means we have of detecting myocardial diseases, but their value is worth while more after the disease is well established than in the beginning.

The study of fibrillation, heart-block and

flutter concern more after treatment and diagnosis. Tachycardia may be functional or associated with organic disease. Heart-block is associated with acute infectious disease and rheumatism and means a very intense inflammation of the myocardium.

#### FUNCTIONAL DISTURBANCES OF THE HEART.

"Disturbances of the heart may be due to functional causes or an actual disease of the heart which may be either temporary or permanent in their nature. During the developmental epoch the heart is specially liable to disturbances of rhythmic action but infants, as a rule, escape. Older children are thus troubled especially after puberty approaches. Exciting causes, such as confinement indoors, sedentary or over-worked school life, use of improper foods and the effect of poisons of various sorts, as the acute infectious diseases may readily affect the growing tissues of so delicately poised an organ." (McKee and Wells.)

These affections are practically neuroses, and are not accompanied by demonstrable changes in structure; hence, are thus designated functional.

Wilson classifies the symptoms as follows:

##### (A) Motor disturbances:

###### 1. Derangement of rhythm.

(a) Arrhythmia; (b) tachycardia.

###### 2. Momentary syncope.

##### (B) Sensory disturbances:

(a) Heart consciousness; (b) distress; (c) pain.

##### (C) Motor and sensory disturbances combined:

#### PALPATION

Sansom reports 100 cases of influenza, with tachycardia in thirty-seven cases, irregular heart in twenty-five, and bradycardia in five cases. McKee and Wells' experience amply confirms the influence of the influenza poison on the circulatory apparatus, increasing or slowing of the rate and producing abnormalities of rhythm. My own experience, especially in a case which I have observed during the last season, supports this observation. The irregularities in cardiac action so frequently

accompanying chorea, and which often pass away, leaving apparently no lesion, are in all probability instances of slight endocardial or myocardial damage.

#### DIAGNOSIS.

"Even functional disturbances of the heart have a cause and should be sought after and we should not rest content with the diagnosis of a symptom. Muscular weakness or nervous weakness of the heart, or so-called functional or accidental murmurs, should not be accepted without full investigation. As a rule, functional murmurs are not heard in infancy. These murmurs in childhood, particularly in older children, are of fairly common occurrence. Generally they are systolic in time. They are most frequently heard in the neighborhood of the pulmonic cartilage, and are not usually transmitted. Enlargement of the cardiac area is never present." (McKee and Wells.)

Various theories have been advanced to explain these interesting murmurs; suffice it to say that no theory satisfactorily accounts for all these sounds. Haemic murmurs disappear if patient lies down.

#### PROGNOSIS.

As a rule, prognosis is decidedly favorable when organic cause is excluded.

#### TREATMENT.

Attention to diet is always called for, as reflexes arising through the pneumogastric nerve—for instance, those from a dilated stomach—may mechanically influence the heart. If fainting seizures are noticed, the child must be kept in bed. Iron and arsenic used judiciously are of value in anemia. When the first sound of the heart is weak, or when tachycardia is accompanied by syncope, strychnin is the best remedy.

Hygienic measures are of most practical utility, including attention to the skin, lungs, bowels and digestion. Care should be used in prescribing exercise for a seeming functional disturbance of the heart, which may be organic.

#### ORGANIC DISEASE OF THE HEART AND A STUDY OF THE INFECTIONS WHICH CAUSE THEM.

Infants and little children up to six or

seven years of age are not so susceptible to organic heart disease, except those of congenital origin, but from the seventh to the eighth year of age to puberty organic heart disease occurs quite commonly.

I have already enumerated some of the physiological and anatomical reasons why infections occur and are so disastrous. The pericardium, endocardium and myocardium, or all together may be subjects of attack. Rarely are they primarily diseased, but are secondary, and due to an infection from without, or from a secondary focus within the body, and the largest number of them are due to infections of some strains of the staphylococcus or streptococcus bacillus.

"Inflammation of the pericardium is uncommon in infancy and small children, only two cases being seen in 726 consecutive autopsies at the New York Infants Asylum. But in later childhood pericarditis is more frequent and more serious than the same disease in adults." (Holt.) It may be with or without effusion; pericarditis is almost invariably of secondary origin, following (1) empyema, or pleuropneumonia; (2) acute rheumatism; (3) acute infectious diseases, especially scarlet fever; (4) phemia; (5) tuberculosis, and (6) local conditions."

"Pericarditis in infancy is usually overlooked; it is recognized by knowing when to look for it—in infants with pneumonia, and in older children with rheumatism" (Holt). Endocarditis in infancy is exceedingly rare; from the third to the fifth year it is less rare; and very common after the fifth year. It is a little more common in the female than the male.

Holt says: "Endocarditis is usually spoken of as secondary to rheumatism; it is rather to be regarded as a manifestation after the first; of the disease, of 117 cases in our series, ninety-three, or eighty per cent, gave a history of previous rheumatism, or chorea. In a series of 150 cases of valvular disease, still found distinct evidences of rheumatism in 142." "The proportion of rheumatic cases in which endocarditis occurs is much larger in childhood than in adults. Chorea, tonsillitis, almost

any infectious disease, but most frequently scarlet fever may be associated with endocarditis, but in these conditions it is possible that it is sometimes rheumatic. The bacteriology of rheumatic endocarditis has not yet been determined with certainty" (Holt).

#### THE LESIONS.

Poynton found "the mitral valve involved in 149 cases in 150 aptopsies upon children dying of cardiac disease. In only nine was the aortic valve seriously involved."

In the mildest forms of endocarditis it is possible for complete recovery to take place; in others the heart may be slightly crippled; while in most cases there is permanent damage. Mitral murmurs are altogether the most common, both in acute and chronic disease" (Holt).

#### PROGNOSIS.

"The danger to life is not great in acute endocarditis unless it is associated with pericarditis; but when both are present the outlook is serious" (Holt).

#### MYOCARDITIS.

"Disease of the muscular wall of the heart is rare in children and of comparatively little importance, except in connection with acute endocarditis and pericarditis, and the acute infectious diseases. Aside from rheumatism the diseases which form most of the cases are scarlet fever and diphtheria. The symptoms are low blood pressure, feeble heart action, pallor dyspnoea, and attacks of syncope" (Holt).

In organic heart disease rheumatic infections are the most common, but back of rheumatism it is estimated that seventy per cent of cases are from focal infections of which the diseased tonsil is the most common one; the other thirty per cent are due to those causes which produce disturbances in the metabolic processes.

Therefore, an early diagnosis, not only of disease of the heart is urgent, but we must recognize such diseases which produce heart disease and prevent the occurrence of that disease.

#### TREATMENT.

I hope the discussion which is to follow

will not lead to the general treatment of the established diseases of the heart, as interesting as that subject might be, but that you will hold your remarks to the discussion of the importance of an early diagnosis and diagnostic methods, and to ways and means to lessen organic heart disease.

To be able to prolong a child's life for ten years is praiseworthy, but to be able to lessen the heart diseases in a community is constructive and more praiseworthy.

Dr. Fritz Tolbot says that routine examination of hearts and kidneys after severe colds and infectious diseases have revealed a larger number of beginning diseases than he had dreamed of, and the diseases were in their beginning, too, and most of them susceptible of cure. Chorea and rheumatism being secondary diseases, there was a time, perhaps, when the stream of bacteria might have been controlled and turned to their own destruction rather than be allowed to enter the heart.

#### A SUMMARY.

(1) That cardiac conditions of both functional and organic diseases occur in childhood more often than believed, especially after the eighth year of age.

(2) That their management can be improved upon by more watchful care. Even the busy physician should be quick to follow up all diseases which make causes, and should possess accurate knowledge of diagnostic methods and facts.

(3) Due to so sensitive a nervous system, so delicate a digestion and the influence of puberty, functional heart conditions are common in childhood.

(4) That the functional murmurs are generally systolic in time, disappear on lying down or on holding the breath, and the cardiac area is not increased.

(5) That organic heart disease is more destructive, when it occurs in childhood, than in adult life.

(6) That organic heart disease, endocarditis, is due in the main to rheumatism, and diseases which cause it. That myocarditis occurs more in pneumonia, diphtheria and scarlet and typhoid fevers.

(7) That it is largely preventable by the removal of tonsils, *leaving no stubs* and other known foci of infection. Diseased tonsils are the greatest enemy of the human heart; seventy per cent. It is further preventable by the control of infectious fever—by the use of diphtheria antitoxin and toxin-antitoxin for the prevention of diphtheria, typhoid serum to prevent typhoid fever and vaccination against smallpox.

(8) As custodians of public health we should uphold the law in enforcing quarantines and isolations of infectious diseases, and should render aid to our public officials in their fight against ignorance and disease in their public health and school welfare work.

(9) That an early diagnosis of cardiac infections paves the way to many absolute cures; certainly to the modification of their severity.

(10) That while functional disorders of the heart do not require confinement, acute organic infections do, and it should be continuous and prolonged.

(11) That treatment calls for absolute rest in bed during the acute stage, under conditions which reconstruct and do not deplete. Avoid excess of drugs, especially purgatives and digitalis. Opium and bromides are our best remedies early.

In presenting this paper I wish to give due credit to such authorities as McKee and Wells, Holt, Sansom, Thomas Lewis and others. I have attempted to correlate facts rather than to present any new ones.

#### DISCUSSION OF THE PAPERS OF DRs. WITT AND BARBEE

DR. O. S. WARR, Memphis: When we consider that today heart disease heads the list of the causes of death in this country, we can readily appreciate the timeliness of these papers. It seems strange, but is nevertheless true, that the more common a disease is the less systematic effort is paid that disease in the line of prevention. If we are ever to change the condition and place some other disease at the head of the list as the cause of death, we must begin to pay attention to the preventive measures which the doctors have emphasized. It would seem axiomatic that before we can hope to accomplish anything along

the line of prevention we must first know the etiology.

I think it is safe to say that under the heads Dr. Witt has outlined we can include all the organic diseases. While it is true that heart disease is on the increase, there are some facts to bear in mind which have a bearing on its incidence. First of all, there has been a decided decrease in infantile mortality. There are more people reaching the age when degenerative changes necessarily begin than there were twenty-five years ago. Recognizing this fact, one of the most important steps to be taken, and one beginning to be recognized all over the country, is the matter of routine health surveys. The public is beginning to appreciate this, and I believe that if we as a profession do not advocate and preach this the public will soon demand it of us. No longer does the majority of business men, who take an intelligent interest in themselves, wait for some symptom of illness to present itself to go to a physician for a general health examination. The insurance companies were the first to appreciate this, and now they are holding it out to all their policyholders. It is one of the best investments the companies can make.

DR. STEWART R. ROBERTS, Atlanta, Ga.: Dr. Witt opened his paper with the statement that he was not to deal in statistics. You notice that Dr. Warr opened his discussion with the statement that cardiac disease is the leading cause of death in the United States at present. It is quite remarkable that tuberculosis has been superseded by a disease of the mechanical system of the body. It is a closed system—the heart, the capillaries, the arteries and the veins. It is conducted and managed by a pump which has a set of excellent walls and valves which keep the blood from going in the wrong direction. It is really the mechanical system of the animal body.

Another good classification of heart disease, in addition to the one Dr. Witt gave, is based on the age of the patient. Up to the age of thirty organic disease of the heart is either congenital or due to the rheumatic group. From thirty to fifty, with the exception of these congenital and rheumatic cases, which carry over to the fourth and fifth decades, it is usually due to syphilis. After fifty it is usually due to degenerative change either in the heart or the coronary arteries, or the system as a whole. There are other fundamental and simple things to remember, and I think the older we get, the more simply we think as we go on in medicine.

A most interesting and illuminating statement in Dr. Witt's paper is this: that probably the best preventive and cure for heart disease is simple, sensible living. The condition of the cardiac muscle is the key to cardiac pathology. I sympathize with Dr. Warr in that we should pay more attention to symptoms if they exist, but never-

theless the muscle is the key to cardiac pathology, or, translated to daily life, what can the patient do with his heart? With his circulation? Can he climb stairs or hills and do work and not have edema of the feet? Can he do the day's work without being conscious that his pump is weary?

There is another thing that we have to distinguish between these individuals who have cancer phobias and those who have heart phobias. MacKenzie says that fifty per cent of the people who come in for examination of the heart have nothing wrong with them.

I do not know much about the causes of heart disease. It seems to me that just as automobile engines vary in durability so must the human engine vary. I think individuals develop signs of heart disease without any evidence that I can lay my hand upon. There is certainly variability in the quality of the heart muscle and in the arterial wall and muscle. We have three-ply hearts and six-ply hearts and they vary in durability. There are certainly individuals in whom the circulation grows older far faster than the nervous system or the lungs. We see individuals who are older in their circulatory system than in any other part of the body. The arterial wall never rests. It is periodically and rhythmically subject to each diastole and systole of the heart, and always the blood is running through it. It is said that we are now living faster—and I guess we are—but they had arteriosclerosis in Egypt at the time of King Tut, and they find it in all ages. As Dr. Witt said, age is the cause of arteriosclerosis, and some people grow old in their circulation before they grow old any place else. I see many individuals of eighty years with good hearts, and many others of forty or fifty years who have never had syphilis and have kept all the commandments from their youth, and yet have arteriosclerosis.

I think we use the term myocarditis too much. I cannot say whether or not the heart muscle is inflamed, but I can tell after listening to the history of a case what the patient can do. We must distinguish between true cardiopaths and false cardiopaths. We must remember that obesity means hypertension just as high pressure means hypertension; the idea of the obese person being a person with overworked heart and kidneys. The surgeons know this and hesitate to operate on people who are overfat.

Another thing is the cardiac rate. The patient with goiter, or beginning hyperthyroidism, had in the beginning a good myocardium, but it is the tachycardia that wears out the heart. In our therapeutics how much do we slow the heart down? Every surgeon says: "If this pulse stays about ninety, I will not be uneasy, but if it goes above one hundred then I will." Let that continue year after year; the slower the pump, all other things being equal, the longer the pump will

last. I think we are getting down to the simplification of our studies of our ailments and to the simplification of our treatment.

One thing that has helped me a great deal is a spirometer (?). It is a very cheap instrument, and certainly it is a helpful one.

Lastly, let us not use too many remedies, too much drug therapeutics. Let us learn digitalis, and one kind. I use the Minnesota digitalis, to my mind the best we have ever had. You can digitalize a patient with ten or fifteen grains of the leaf and do it accurately. With myocardial edema, that can disappear without purging. I see patients with such edema who are given maximum doses of Epsom salts every day. I think that is a little strain on the strength of a well man and that it should not be done, and I know that edema of cardiac origin, like renal edema, will disappear under digitalis plus rest in bed.

The more we reach our conclusions about the individual patient, the more we can do for his heart, and, furthermore, I believe surgery is coming to the use of digitalis and that digitalization of the heart within reasonable limits before operation that involves danger of death. There is no reason why a patient who is to be subjected to operation, and where the strength of his heart is in question, should not be subjected to a reasonable digitalization.

DR. E. R. ZEMP, Knoxville: I must confess that I am extremely sorry that Dr. Roberts mentioned the word digitalis. If there is one thing that the medical profession wishes to do at present, it is to absolutely divorce digitalis from heart disease in the mind of the ordinary physician. You can take almost any case of heart disease, and the first thing the ordinary physician thinks of is digitalis. He rolls it under his tongue like a good Baptist does Mesopotamia. He does not know just what it is, but he uses it in every case, and in the vast majority of cases with poor results. I am not decrying digitalis, but am saying that we should disassociate that drug from heart disease, that it should be our last resort and not our first. Any physician who will take a case of heart disease and permit that patient to walk around and give him twenty to fifty drops of digitalis three times a day is not only injuring that heart by permitting the patient to walk around, but he is placing that patient in a light of unjustifiable security. Then when he does break down, in spite of the digitalis, his state is worse than at first. Let us disassociate in our minds these two words—digitalis and heart disease. The sooner we do this, the better for the patient. It tends to an erroneous diagnosis, and it is disastrous, unless we find out, just as we do the sugar tolerance of the patient with diabetes, what his digitalis tolerance is and then give what he needs. Only in this way can we get good results from this drug.

Another thing I would like to divorce from the minds of the physicians is that rheumatism is a disease of the joints. In the majority of cases, especially in children, rheumatism is an infectious carditis. If we would adopt that name, then our attention would be fixed upon the heart and not upon a few joints throughout the body which never do any more harm than make the patient go to bed, which is what he should do. Infective carditis is a good name for rheumatism, for the reason that it centers our mind on that part of the body which is affected, and when most affected means most to the patient. No patient with rheumatism should be treated in a haphazard way and permitted to go about, even if he has no cardiac murmur.

Dr. Barbee says that the diagnosis of heart disease murmurs belongs in the Dark Ages. I propose to continue living in the Dark Ages and make the majority of my diagnoses by murmurs. This may not tell me which valve is diseased, but it will tell me that some valve is diseased, and I will at least undertake to put that patient in a position whereby he will get the best results. The best preventive measure for myocarditis and endocarditis—but I do not think that you ever get endocarditis without first having myocarditis—is rest, and it is only by keeping these patients in bed, for months if necessary, that we can prevent cardiac disease.

Dr. Roberts says that the older we get the more simple we get. I agree with him and feel that I am getting idiotic.

DR. YOUNG W. HALEY, Nashville: I want to agree with Dr. Witt on two points. One, to examine sufficiently to find out the kind of heart trouble. Second, about the importance of rest for the relief of these heart conditions; after the condition is found and the cause removed these patients should be given rest so that the heart may recuperate.

Dr. Witt and Dr. Barbee spoke of preventive measures and Dr. Warr spoke of the examination of school children. I do not wish to reflect upon the inspection of school children and the good it may do, but I wish to bring out one way in which the inspection of school children may not bring the relief the child may get from many conditions, whereas relief is only sought for one condition. For instance, the school child probably is underweight and has diseased tonsils and adenoids which might be deemed responsible for this condition. This child falls into the hands of the specialist, who removes the adenoids and tonsils, and then everybody wonders why the child does not take on weight, why the condition was not relieved when the tonsils and adenoids were removed. The urine, the heart and lungs of this patient have never been examined. I take it for granted that the tonsils and adenoids were one cause of the condition, but there may

exist some tuberculous condition, a respiratory condition, a pyelitis, or some condition in the digestive tract that has not been discovered.

I think the school inspection is a step in the right direction, but I see where it might bring about some false conception as to why the child should not recover as he should after certain conditions are removed.

DR. C. J. CARMICHAEL, Knoxville: I think both papers were very timely, Dr. Witt's because it strikes at preventive medicine, and Dr. Barbee's because it strikes at the great mass of these cases. Dr. Witt gets us into deep trouble because he tells us that the myocardial involvement is much more frequent than the endocardial. That is true; the heart muscle is involved twice as frequently as the valves. If this is true then the problem becomes more difficult because, as Dr. Roberts said, it is one of the most difficult things we have to do to determine the efficiency of the heart muscle. As he said, we can tell whether the patient can walk upstairs, whether he can walk a certain distance, or whether he can climb hills, but to my mind that does not diagnose condition of the myocardium. If we fail to find a dilation, if we fail to find a cardiac murmur, if the blood pressure is at or near normal, we say the cardiac muscle is all right. We cannot depend upon these symptoms for so many of the patients have had a degeneration that has been going on for a long time, and if an electrocardiogram is made we will find that the patient already has at least a potential myocarditis.

I wish to call attention to the work done by Alvarez, in which he found 12.7 per cent. of the students in the freshman class of the University of California with hypertension. In Harvard there was 12.3 per cent. This began early in life and nobody has yet told us how to stop that condition. Nobody has yet told us how to stop worrying and live the simple life, and yet go on with the work we are doing. The Doctor referred to the presence of bacteria, the streptococcus and that large family, but until we have some way of diagnosing the presence of the streptococcus hemolyticus in the human body and some way of removing it, we will not be able to remove them in the heart valves. We can find these organisms in the heart valves, in the pyorrhea pockets, in the teeth and tonsils and anywhere you like, and yet we can look almost anywhere and not find them, and so the problem becomes increasingly difficult.

I hope some time, in this or some other meeting, to hear some man give us some statistics on the heart cases that have developed subsequent to tonsillectomy. I would like to see upon what they are going to place the blame then. Recently I have read a report by some New York investigators in which they claimed that

the stumps of tonsils are far more dangerous than the tonsils themselves, and now our men are taking out the stumps that were left by other workers.

I wish to call especial attention to the cases with myocardial involvement and the possibility of detecting these cases early with the electrocardiogram. We cannot tell by listening to the heart whether or not the myocardium is involved, but this can be determined by means of the electrocardiogram.

DR. JESSE F. ADAMS, Bradyville: Dr. Barbee referred to chorea and rheumatism and, in a way, told us that they would be prevented by removing the tonsils. I have always hoped that was true. I have told my patients that it was true but, unfortunately, the statistics indicate that it is not true. A recent investigation in New York, the report of which was published in the *Journal of the American Medical Association* within the last month, showed that chorea was more common after tonsillectomy than before and that rheumatism was not decreased much in parallel groups. These people advocated the removal of diseased tonsils. We must accept the report as unbiased, and then again with increased tonsillectomies we also have an increased number of rheumatic hearts. That is against us.

In regard to digitalis, Dr. Zemp's remarks are like stepping on the toes of the general practitioner. I remove some tonsils and I am in general practice. He thinks we are using too much digitalis. I doubt if the specialists know any more about the use of digitalis than does the general practitioner, and when the heart refuses to compensate and we have done all we can do we have learned that digitalis will at times put patients on their feet and keep them there, and no matter who is harmed so long as that happens you will find country doctors using digitalis.

DR. JAMES B. McELROY, Memphis: Without prolonging the discussion unwarrantably, I think it may be of interest to call attention to one or two things.

In the first place, both papers were very radical and insisted that to prevent disease it is necessary to know its etiology and classification, and when we think about that and appreciate all the various things which may eradicate or prevent these various conditions, we may appreciate the eradication of streptococcus infection, we may appreciate and preach all these things, we may preach the avoidance of syphilis, we may preach eugenics, the avoidance of war and heart disease and all that, but still those things will always be with us and I think it is one of the important things for the doctor to recognize these conditions in the very beginning and to have the proper conception of them. There is nothing so important as the relation of cardiac

and rheumatic diseases in these conditions. Why does not the laity pay heed to these things? We have to learn when there is a cardiac lesion and advise them accurately, and I do not think we have to wait until there is a relative myocardial incompetency to do that. We may say that the majority of these are primary syphilitic disease. I am accustomed to think of this as a large candleabrum, the large arteries being the stick, and the small arteries and veins the branches. If we are going to do the patient any good we must treat the disease down at the base, the heart. After the disease has produced an aneurysm or an aortic stenosis it is hopeless.

However difficult this classification may be we find these cases grouped together very often, and particularly is this the case with the cardiac diseases and the sclerosis. I would like to pay my respects to essential hypertension, which I do not believe very much in.

DR. R. H. WITT, Nashville (closing on his paper): The discussion has taken some very interesting channels, including the subject of digitalis. I am sorry our lamented Frank Jones is not here to make some remarks about digitalis. I do not believe it gets us anywhere definitely to say that we must dissociate digitalis and heart disease. They have been associated too long for us to suddenly divorce them, and they have been joined together—I think to our advantage — by the best clinicians for over one hundred years. If Dr. Zemp means that we must not associate heart disease *per se*, or as a name, with digitalis that is all right, but it seems to me there should not be any doubt that in a large number of manifestations of cardiac disease digitalis is a very important drug. No man I should say, unless it be Dr. Zemp himself, whose position I do not entirely understand, is more critical of digitalis therapy than I am, but I am a firm believer in its use when necessary.

I will not go into the large subject of symptoms—Dr. Barbee has touched very nicely on that—except to say that no cardiac murmur, if it be systolic in time, should have much importance attached to it, unless it has remarkable qualities, or is very definitely associated with cardiac inefficiency.

About tonsillectomy, I am accused of being rather anti- on the tonsillectomy proposition. I think many are removed that could just as well remain in. I have not read the article referred to which states that there is more chorea and rheumatic fever after tonsillectomy than before. I do believe in the legitimate removal of tonsils and other foci of infection, particularly in cases which have been subject to rheumatic fever, pericarditis, endocarditis and chorea. The removal of tonsils has got us somewhere and will get us somewhere in the future. No one believes that

the removal of tonsils will absolutely prevent a recurrence.

That very wide range of heart disease that comes in middle life or later from essential hypertension, and those incident to arterial changes that occur in some people earlier than in others, we will not eradicate. Those changes come with age and time and will always be here. I do

think that there is a wide range of people whose hearts could be saved for a few more years, and who could be conserved and made able to withstand infectious disease and other pathology that we are all subject to, particularly pneumonia. Personally, I believe that two games of golf a week and a cheerful view of life will help.

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## A NEW TEST FOR SUGAR\*

DR. J. B. STEELE AND DR. E. N. HALLER, Chattanooga

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DR. J. B. STEELE AND DR. E. N. HALLER.

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**W**' are introducing this sugar test because it is a scientific advancement and a distinct improvement on the copper reduction tests in common use. It is not practical for a busy physician, nor for any practitioner unless he employs a technician; but it is a distinct advantage in the laboratory in consequence of the accuracy and uniformity of reports.

Due to the faulty methods of urinalyses and to the unavoidably diverse, inaccurate interpretations of different analysts, the Metropolitan Laboratories of the Metropolitan Life Insurance Company of New York were put under the control of Dr. Stanley R. Benedict, eminent and proficient biological chemist, to improve, perfect and standardize the technique for urinalyses. In close association with Dr. Benedict was Dr. Otto H. Folin, also skilled in biological chemistry.

Conclusions following several months research:

(1) That "the only disadvantage of boric acid as a preservative is that it is not and never will be a urinary preservative. There is no question about it."

(2) That on account of the personal version the interpretation of a given amount of sugar varied astoundingly, and the reactions lacked uniform interpretation.

Dr. Benedict asserts that "without leaving any room for question, investigations within the last few years have shown very conclusively that all urines contain sugar. There is no question of that whatever. All urine contains sugar which will reduce Fehling's solution; but most samples contain also interfering substances, especially creatinine, which will counteract that tendency to reduction with Fehling's, so that the majority of normal urines as ordinarily analyzed will not give a Fehling's reduction."

On the basis that all urines contained sugar the Benedict-Folin technique was developed—a method whereby the quantity of sugar in each specimen is ascertained and compared with a normal percentage table, thus eliminating the personal question, especially in the border-line reactions; that is, the turbidities without precipitation (commonly referred to as suspicious, doubtful, suggestive reactions)—one faction considers them positive—the other negative.

Prerequisites for test:

First prepare a series of known or standard glucose solutions of 0.1, 0.2, 0.3, 0.4 and 0.5 per cent strengths—using pure dextrose (Merck's Highest Purity dextrose, S. R. B.).

Then one c.c. of each of these known glucose solutions is transferred to respective test tubes and subjected to the same tech-

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nique as is the unknown specimen of urine (which follows), producing a standard colorimeter. On account of the unstable nature of these glucose standards, what is known as standard picramic acid solutions (a mixture of picramic acid, sodium carbonate and picric acid) are made and so diluted that their color corresponds to that obtained from one cc. (diluted to twenty-five cc.) of 0.1, 0.2, 0.3, 0.4 and 0.5 per cent glucose standards. The fractional percentage glucose standards are defective after twenty-four hours.

As the technique of this test calls for a 0.2 per cent picric acid solution, a five per cent sodium hydroxid solution and a fifty per cent acetone solution—these are all prepared beforehand, and must be added in the order named.

The determinations are made using one cc. of each specimen, placed in test tubes of substantially equal internal diameters, which are graduated at the twenty-five cc. level.

#### Actual technique:

Transfer one cc. of each specimen, just as it comes, without filtering, to a corresponding twenty-five cc. test tube in rack (we analyze twelve specimens at a time), add to each three cc. of a 0.2 per cent picric acid solution, 0.5 cc. ( $\frac{1}{2}$  cc.) of a five per cent sodium hydroxid solution and five drops of a fifty per cent acetone (the acetone completely abolishes the color due to creatinine without affecting that due to the sugar so that the creatinine color, which is intensified by picric acid in alkali medium, fades out at once and the sugar color gradually grows heavier and reaches a final definite maximum.) The color produced by the creatinine would interfere if not caused

to disappear by the acetone. The acetone must be prepared fresh every day (this requirement may seem unreasonable and superfluous, but the experience of Dr. Benedict has shown that it is necessary).

The tubes are then transferred to an adequate vessel of boiling water, where they remain for ten minutes; in the presence of pathological amounts of sugar, you will note that the boiling will cause the contents of the tubes to become noticeably darker in color. Then they are allowed to cool, and finally diluted with distilled water to the twenty-five cc. level. Now they are ready for comparison with the standard colorimeter (either picramic or dextrose). The coloring of the solutions thus obtained is proportionate to the amount of reducing sugar up to a concentration of at least 0.5 per cent (or, a definite amount of sugar produces a certain degree of color).

The quantity of picric acid present during the reaction is not sufficient to react with much more than the glucose present in one cc. of a 0.5 per cent solution.

The big thing in this test has been the elimination of interfering substances, particularly creatinine.

The vast majority of specimens will run as low as 0.1 per cent, or below that, but these lower estimations are insignificant and therefore disregarded.

So that this test (1) eliminates errors due to one worker pouring in twice as much of one sample of urine as another; (2) eliminates the confusion of two urine samples containing the same quantity of sugar but one giving a negative reaction and the other a positive, owing to different concentration of interfering substances and depending upon the personal equation.

## INCREASED INTRACRANIAL TENSION\*

### A REVIEW.

LYLE B. WEST, Chattanooga.

THE recent World War has given us a new understanding of head injuries and definite features in its treatment are now recognized as essential.

Prognosis and treatment depend upon the degree of intracranial injury rather than the location and character of fracture. The most urgent and constant manifestation of intracranial injury and, with few exceptions, the all important finding, is increased intracranial tension, due to edema; free fluid or hemorrhage interfering with the paths of circulation and absorption of the cerebrospinal fluid.

Depressed fracture and extradural hemorrhage give focal symptoms of pressure. Contusion gives a gradually increasing tension. Mortality in head injuries is almost entirely due to increased pressure from early hemorrhage, and later, edema or free fluid.

The incidence of head injuries has increased enormously, chiefly because of the automobile. Recent statistics (1) show that accidents of the past year in the United States resulted in 209 deaths a day; the automobile as a cause heads the list with thirty-seven deaths a day.

There have been no advances in the treatment of the desperately injured. However, there are improvements in the diagnosis and treatment of the less severely injured head cases.

#### HISTORIC (2)

Almost a hundred years ago Majendie (3) discovered, in the roof of the fourth ventricle, the minute opening that bears his name, and showed the connection between the ventricular cerebrospinal fluid and that of the subarachnoid spaces of the brain and cord.

Corning (4) in 1885, first tapped the spinal canal by inserting a needle between the last two dorsal vertebrae for the purpose of anesthetizing the cord; this also was the first attempt at spinal anesthesia. Wynter (5) in 1891, drained the spinal canal for tuberculous meningitis. Quincke (6) published in 1891 his technic of lumbar puncture, with its diagnostic and therapeutic possibilities. He routinely measured the spinal fluid pressure by allowing the fluid to rise from the lumbar needle into a pipette; the normal, as he ascertained it, is 90-120 mm. This most important diagnostic procedure has been fearfully neglected until very recently, and even now its value is not sufficiently appreciated.

Weed (7) has comparatively recently demonstrated the passage of the fluid from the foramina of Majendie and Luschka, through the subarachnoid spaces over the cortex of the brain, to be absorbed mainly by the arachnoidal villi along the sinuses. Landon (8), formerly assistant to Frazier of Philadelphia, devised in 1917 the spinal mercurial manometer; however, he did not publish his series of cases and little was heard of the procedure until the publication of Sharpe's (9) excellent work in 1920.

#### ANATOMY.

Briefly, the cerebro-spinal fluid is secreted by the choroid plexuses of the two lateral ventricles; from these it flows through the comma-shaped foramen of Monro to the third ventricle, thence along the aqueduct of Sylvius to the fourth ventricle; here it makes its exit by way of the foramen of Majendie and the two lateral slit-like clefts of Luschka to the subarachnoid spaces at the base of the brain beneath the tentorium cerebelli. From these basal cisterns most of the fluid rises over the surface of the midbrain through its notch in the tento-

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rium, the incisura tentorii. A smaller portion descends along the ventral aspect of the spinal cord and returns along the dorsal aspect, though these two streams are not entirely distinct, to augment that which bathes the cerebrum. The majority is absorbed by the arachnoidal villi. The entire cerebro-spinal fluid, under normal conditions, is probably changed from five to seven times in twenty-four hours.

Bland-Sutton (10) compares the choroid with the kidney, the one secreting cerebro-spinal fluid, the other urine; partial obstruction of the secretion causes hydrocephalus on the one hand, and hydronephrosis on the other. Complete obstruction destroys both; each is especially liable to epithelial tumors.

The brain tissue occupies all but about eight per cent of the intracranial space; the remainder is utilized by cerebro-spinal fluid and blood vessels; all contained in the skull, a non-elastic bony box.

The brain itself is wholly without sensation, the pia mater has few sensory fibers, the arachnoid is wholly insensitive; the dura is the only intracranial tissue that is to any degree endowed with sensation.

A fracture through the anterior cerebral fossa may open the frontal, ethmoidal, or sphenoidal cells and cause bleeding from the nose and mouth. Fracture through the middle cerebral fossa may pass through the body of the sphenoid or basilar process of the occipital bone and cause bleeding into the mouth or behind the posterior pharyngeal wall. If the middle fossa fracture passes through the petrous portion of the temporal, there may be bleeding from the ear. Cerebro-spinal fluid leakage is most frequently seen from the ear in fractures involving the middle fossa and passing through the internal auditory meatus; this due to the anatomical extension of the arachnoid and dura into the internal meatus. Fractures through the posterior cerebral fossa may cause bleeding into the structures of the posterior cervical region.

The dura in children is more firmly attached to the interior of the skull than in

adults, hence in childhood it is more frequently lacerated when there is fracture. Due to the slight elasticity of the child's skull and the relatively wide sutures, they have fewer basal and more vault fractures than the adult; the force is absorbed at the point of impact and is not transmitted.

The inner table of the skull is thinner and more brittle than the outer, hence it is almost always more extensively splintered; indeed, it may be fractured when the outer table is not (11).

#### CAUSES

Increased intracranial tension occurs in acute cranial trauma, hydrocephalus, brain tumors and abscess, the acute and chronic meningitides, encephalitis, internal hemorrhagic pachymeningitis, uremia, alcoholism, and carbon monoxide poisoning (12).

By far the majority of cases seen in a general surgical practice are due to trauma. In these the etiology deserves comparatively little consideration from a diagnostic viewpoint because a seemingly trivial accident may end fatally, while a severe accident may give little or no trouble.

Sharpe (13) found free blood in the cerebro-spinal fluid of newborn babies in more than ten per cent of 364 consecutive deliveries. Sharpe and MacLaire (14) think that a small hemorrhage may be absorbed and give no defect in the child's future normality. Holt (15), however, believed that even small hemorrhages usually cause some permanent injury, though this may not be manifest for years.

If an infant more than four weeks old, usually between six and eighteen months, has symptoms of markedly increased intracranial pressure and has normal spinal fluid, one of the first things to consider is internal hemorrhagic pachymeningitis. The presence of retinal hemorrhage is strongly presumptive, and a positive fontanelle puncture is pathognomonic (16).

LeCount and Apfelbach (17) in 504 autopsies of cranial fractures say that cerebral edema is the most frequent finding. Free cerebro-spinal fluid is rapidly absorbed after death.

Naffziger (18) has recently drawn attention to an interesting point which has previously received little notice. Frequently, after trauma, upon opening the dura, clear fluid will spurt out under pressure; after the escape of this fluid the pressure is relieved and the brain falls away from the dura. But this fluid is in an abnormal space; between the dura and arachnoid there is normally no fluid and there is, furthermore, no normal communication between the pia-arachnoid space normally containing fluid, and the arachno-dural space. We must infer then that the injury has caused a tear in the arachnoid which allows fluid to enter the epiarachnoid or subdural space, from which there is little or no absorption.

#### SYMPTOMS AND TREATMENT.

A classification of cases showing increased intracranial tension, to be of any clinical service, would be too long to be practical. Each case is a law unto itself. The treatment of compound fracture, debridement with tetanus antitoxin; for depressed fracture, elevation; and for extradural hemorrhage, trephination, is rather universally standardized.

Symptoms will approximately vary in direct proportion with the degree of intracranial tension, and with its location, if localized.

The free interval or period without symptoms is longer in subdural than in epidural hemorrhage, ranging in reported cases from a few hours to sixteen months. Fever is rather characteristic of subdural hemorrhage (19).

The symptoms of increased intracranial tension are due to cerebral anemia; anemia of the vasomotor centers results in increased blood pressure, anemia of the vagus center gives a bradycardia, while anemia of the respiratory center gives a slow respiration, the rate being compensated by depth or volume. These, however, are more or less terminal symptoms, and no head injury, other than the most severe, should be allowed to reach this stage. There will be increased blood pressure, slow pulse and

respiration only if these centers are able to react to the stimulus of pressure anemia; this stage is termed "medullary compensation."

Venesection for the relief of high blood pressure in the stage of medullary compensation is absolutely contraindicated; the hyperpiesis is an effort on the part of the organism to send blood to the vital centers in the medulla against an increased pressure.

Should this tension continue, the centers become fatigued and we have the stage of "medullary decompensation," or exhaustion, with falling blood pressure and rising pulse and respiratory rates. Treatment of any kind in this latter stage usually proves futile. However, one or all of these late symptoms may be absent. Besley (20), in an analysis of 1,000 cases of skull fracture, says, "It is surprising how infrequently the pulse rate is slow. The average is ninety-six in all cases and in only sixty-five of 1,000 cases was the average below seventy." It is now recognized that the blood pressure is not an accurate index of intracranial tension, contrary to a former conception (21). An increase of blood pressure is most frequently seen in hemorrhage; it requires a rapidly increasing pressure, and edema is rarely sufficiently rapid.

Because of indriven infection it is dangerous to irrigate the nose or ears when there is blood or spinal fluid leakage.

Ophthalmoscopic examination of the eye grounds should be a routine procedure in these cases; there may be a slight choking of the nasal half of the disk or some tortuosity of the vessels rather early; though in most instances there is no change visible until about eight hours or longer after the injury, after this time the eye grounds as an aid to diagnosis increase in value.

Opinion is at considerable variance concerning the delayed or late symptoms of head injuries. Hoag (22) finds that subjective symptoms are present in eighty per cent of the cases of head injury, eight per cent have psychotic symptoms and only

ten per cent show no subjective complaint. Michael (23) finds epilepsy in thirty-six per cent of old head injury cases and concludes that fifty-three per cent are unable to sustain themselves. On the other hand, recent statistics from the British Ministry of Pensions (24) show in a series of 18,000 head injuries, that less than five per cent have developed epilepsy. There are on record numerous cases of thrombosis or rupture of a vessel days or weeks after injury. Delayed traumatic apoplexy is a definite clinical entity.

Various types of neuroses may be due not only to cerebral laceration but to permanent circulatory derangement resulting in so-called chronic cerebral edema. This may result in liquefaction, necrosis or cyst formation years after the injury. In many cases of traumatic epilepsy no microscopic lesions are found, but histologic examination of the brain shows diffuse alterations in the white and gray cortical substance. This may be neuroglial sclerosis, small disseminated hemorrhages, and chromatolysis of the pyramidal cells.

Excision of epileptic centers after cortical stimulation and recognition of the involved area is usually followed, in the experience of Lenormant (25), by the cessation of convulsions in 60% of the cases. Clark (26) warns that we must not forget that essential epileptics at times show focal convulsions or general convulsions with a focal onset. To mistake such cases as evidence that the epilepsy is Jacksonian and therefore suitable for operation is alike tragic and absurd. The true Jacksonian march begins either distally or centrally in an extremity and extends throughout the part in a physiologic manner. Dandy (27) in his operative experience finds frequent cerebral lesions and concludes that there is a pathological basis for so-called idiopathic epilepsy in a large proportion of cases.

Uncontrollable increased intracranial tension and signs of local irritation are the only indications for surgery in the chronic as well as the acute cases.

Sharpe (14) says, "every child evincing

the mildest signs of cerebral irritation, or of increased intracranial pressure should be subjected to a lumbar puncture."

The usual treatment of head injuries; ice cap, catharsis, and morphine, in the light of more recent findings is insufficient. A patient admitted immediately after a head injury is usually in shock; this should receive supportive treatment and nothing else done until there is recovery from the shock. Even the slightest manipulation in profound shock may be the straw which breaks the slender connecting thread to this life.

Lumbar puncture with spinal fluid pressure observations are essential to proper management. At times withdrawal of fluid may so reduce intracranial tension that operation may be avoided. In a large series Sharpe reports operation in only 31%. Lumbar puncture is not difficult; it can be done by any one with ordinary skill and caution.

Patients with bloody spinal fluid should be tapped at intervals of four to six hours until the pressure symptoms subside. In addition magnesium sulphate, two ounces to six ounces of water with the addition of one dram of paregoric, should be given by rectum every four hours after the method recently elaborated by Fay (28). If the pressure continues to rise, 100 c.c. of a 15% sodium chloride solution may be given very slowly by vein, 2 c.c. per minute (29). If, in spite of these measures, the pressure continues to rise, a trephine opening should be made; this is large enough to release subdural fluid if present, and to tap the posterior horn of the lateral ventricle at Keen's point. This latter is a simple procedure with a blunt ventricular canula; it can be done under local anesthesia, and it affords great relief by removing the fluid contributing to the supratentorial pressure which could not entirely be relieved by lumbar puncture. A large subtemporal decompression is rarely necessary if this routine is followed. Fay reports that only three cases of head injury in Frazier's clinic in the past two years were operated upon, and

they had localizing symptoms. Magnesium sulphate is preferred to sodium chloride because there is no residual tissue edema as is frequently the case with the use of sodium chloride (30). Indeed, at times, the administration of magnesium sulphate will give better and more lasting results than lumbar puncture (31), and is certainly a more conservative procedure.

An x-ray, either stereoscopic plates or antero-posterior and lateral views should be made routinely in possible fracture cases. Fractures of the base are frequently not recognizable by the x-ray; some roentgenologists claim to be able to recognize increased pressure and even mild edema (32).

Jackson, Sharpe, and others find acute brain injuries no contraindication to lumbar puncture, I have never seen any untoward result from lumbar puncture in acute cases; the danger of foramen magnum hernia apparently holds only for the chronic cases of increased pressure. However, one should relieve the pressure gradually in any event, and also intelligently by the use of the spinal manometer. The use of the latter and accurate readings are at times difficult because of the semi-conscious irritability of these patients.

Schoenbeck (33) reviews the autopsies of seventy-one deaths following lumbar puncture and finds that sixty-seven had brain tumor or other chronic disease. Sachs, however, does not use lumbar puncture for fear of hernia (34).

It is interesting to note that 1 c.c. of pituitary extract intra-muscularly will frequently relieve the headache which so often follows lumbar puncture done for conditions other than increased tension (35).

In apparently hopeless cases of medullary edema, puncture of the cisterna magna may save when all seems lost. There may be such a quantity of blood that there will be no flow from the lumbar needle, while there will be a free flow from the cistern. It is also useful in the presence of lumbar skin infection or fusion of the lumbar vertebrae.

According to the technic of Ayer (36) the patient is placed on his side for lumbar puncture. After aseptic precautions the needle, the same as used for lumbar puncture, is inserted at a point in the midline just above the spine of the atlas, and is directed forward and upward in a line with the external auditory meatus and glabella. The needle enters the dura at its uppermost attachment to the foramen magnum, where there is a distance of 2½-3 cm. between the dura and the medulla. The discomfort to the patient is the same or less than in lumbar puncture. The technic is not difficult but is potentially dangerous; the operator should have preliminary practice on the cadaver. Ayer (37) reports 2,000 cisternal punctures by some fifty operators without any serious mishap.

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## LYE STRICTURES OF THE ESOPHAGUS

RICHMOND MCKINNEY, M. D. Memphis, Tenn.

From the Department of Surgery, University of Tennessee, College of Medicine.

THE constantly increasing number of cases of lye stricture of the esophagus coming to those of us doing direct esophageal work may be taken either as an indication of the greater incidence of the condition, or as evidence of the more general recognition that prompt and intelligent treatment of this dire affliction may bring about relief. I have had eighteen of these cases in the space of two years time, and am becoming more and more impressed with the fact that it is only in the children of comparatively ignorant parentage that this calamity occurs, hence the necessity for state intervention to decrease the frequency of this accident, which is readily avoidable.

The Committee on Lye Legislation of the American Medical Association is bending its efforts toward securing the passage of state laws requiring the conspicuous labelling of lye cans with a poison label that will be striking to the eye of the purchaser, and it is astounding to us to find how vigorous is the opposition of lye manufacturers to so labelling their products, forcing us to the conclusion that the possibility of decreased sales is with them paramount to all consideration of human suffering, and frequently death, as results from the ingestion of lye.

To turn now to a brief review of the clinical features that are observed in caring for cases of esophageal stenosis from lye.

The first, and to me by far the most important feature to be borne in mind, is that but rarely do we have stenosis immediately after the lye is ingested. Once the

primary burns have healed, there is comparative immunity for weeks or months. Very few of my cases have shown any notable impairment of deglutition before this time, and a number of them not before nearly a year later. This leads, of course, the uninformed to conclude that there will be no further trouble after the primary erosion has healed, and therein lies the danger of delay.

So far as I am enabled, after cases of primary lye burns leave the hospital, I have the social service workers follow them up, and have them returned for bouginage at the very first manifestation of esophageal obstruction. By so doing, I believe I have prevented the development of some of the severe types of strictures. These latter are the cases requiring gastrostomy and prolonged efforts before sufficient esophageal dilation can be obtained for adequate normal nourishment.

The question that often is raised is as to whether these cases are ever normal after a well-organized cicatrix has formed. To this I would reply, no—that is, so far as the possibility of future contraction of the cicatrix is concerned. But they may be normal insofar as normal deglutition is in mind, for most of the cases that I have handled have eventually arrived at the point where they could swallow all kinds of foods, this being true of seventeen of the eighteen cases treated by me during a two-year period, but I must say that I draw the line on marbles, for two of my juvenile patients evidently were testing out my handiwork, as they attempted to swallow, intentionally or otherwise, large china marbles, which lodged at the site of the stricture, and required that I remove these by means of the esophagoscope.

\*Read at the Forty-sixth Annual Congress of the American Laryngological Association, Swampscott, Mass., June 2-4, 1924.

I am inclined to believe that once a patient with a lye stricture of the esophagus, always a patient, in that there must be occasional dilation in the future, but in this I may be wrong, as my experience with lye strictures of the esophagus is of too recent years for me to express a positive opinion in this respect; but I do know that the first cases that I ever treated still come to me for dilation at intervals, and some of them date back seven or eight years.

Several of my cases have shown multiple stenosis, there being more than one stricture, but usually the stricture is of an elongated type, occurring about midway or somewhat below the crico-pharyngeal narrowing of the esophagus. Why the stricture does not occur higher in more cases I am at a loss to understand; perhaps the escharotic excites a reflex at the normal narrowing in the cricoid region, where we naturally would expect these strictures most frequently to be found, and before it can produce a deep burn, the lye passes on down the esophagus, to leave its mark on the tender mucosa midway. There may, also, be a certain amount of salivary protection in the upper end of the esophagus, which prevents immediate action of the lye. I wonder, too, why it is that the stomach never shows burns, for some of the lye must pass clear through the esophagus; perhaps dilution by gastric juices may account for this apparent immunity.

The treatment of these strictures should be carried out under direct vision, through the esophagoscope. I use the Jackson flexible bougies, gradually increasing the size, until the lumen of the stricture approximates normal, and usually, if there is any permeability at all of the stricture, there is very little difficulty in gradually bringing about dilation. I am very fearful of forced dilation in these cases, and vividly recall one of my cases, a child of nine, who was being nourished by means of gastrostomy, where a general surgeon attempted retrograde rapid dilatation, which resulted in the death of the little chap twenty-four hours later.

Mention of this case brings up the subject of retrograde bouginage in cases of lye stricture of the esophagus.

In my total experience I have had only three cases in whom a gastrostomy was done, and all of these might be called second-hand cases, for the gastrostomy was performed before they came into my hands for treatment. Perhaps gastrostomy could have been avoided in these instances, but there can be no doubt that some cases of lye stricture are so far advanced in undernourishment and water-hunger that gastrostomy becomes imperative. Better early than too late in such instances.

My experience with retrograde bouginage in two of the cases mentioned was that it was used merely as an adjuvant, as small bougies could be passed perorally. The guiding thread was swallowed readily by these patients, one being an adult, and the other a child of nine years, mentioned as above, but in the third case, an impermeable stricture in a child of three years of age, I have not as yet succeeded in getting a thread down, and am still striving to obtain satisfactory dilation from below. I hesitate to use bouginage through the gastrostomy opening unless I have a thread as a guide, although I have attempted it, and am using it in this case.

While on this subject, mention may be made of the case of a young woman, twenty-one years of age, who a year previously had ingested a solution of concentrated lye, and who, after the lapse of nearly twelve months, developed gradual esophageal obstruction, with complete closure three days before being brought to my clinic, even water being regurgitated, and in whom I advised immediate gastrostomy should the stricture not yield to the first attempt at dilatation. Jackson bougies, numbers 12, 22 and 25, were passed in succession, and in two weeks time the young woman returned to her home in a neighboring state, ingesting all well-chewed foods. This case, under other circumstances, perhaps would have had gastrostomy before the bouginage.

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**DEATHS**

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Dr. W. W. Kimsey, aged thirty-five, died at his home in Ducktown following a prolonged illness.

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Dr. Daniel M. Ford, of Hartsville, died at St. Thomas Hospital, Nashville, October 16, following an operation for gall bladder disease.

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Dr. Edward F. Dodson, of Harriman, died September 29, following a brief illness. Dr. Dodson was a graduate of the University of Louisville of the class of 1882.

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Dr. Joseph H. Venn died suddenly at his home in Memphis, October 8. Dr. Venn was a graduate of the University of Pennsylvania of the class of 1894. Dr. Venn was fifty-four years of age and had practiced medicine in Memphis for more than thirty years.

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Dr. John J. Gee, aged fifty-one, died at his home in Chattanooga, October 2, after an illness of about three months' duration. Dr. Gee graduated from the University of Tennessee, class of 1902, and had practiced in Chattanooga since his graduation. He was at one time city physician and later county coroner. Dr. Gee was buried at the home of his mother, Bowling Green, Ky.

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Dr. W. M. Crockett, of Donaldson, Davidson County, died at St. Thomas Hospital October 9, following an operation for gall bladder disease. Dr. Crockett was a graduate of the Medical Department of the University of Tennessee in the class of 1898. Since his graduation he has practiced medicine at Donaldson, a suburb of Nashville. He was fifty-three years of age.

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Dr. R. A. Harrington, of Nashville, died October 11, aged sixty-eight. Dr. Harrington was a graduate of the University of

Tennessee, Medical Department, in the class of 1882, and had practiced medicine in Nashville since his graduation. While in poor health for the past several years, Dr. Harrington continued to practice his profession and was confined to his bed only a few days preceding his death.

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Dr. Samuel D. Acuff died at his home in Knoxville October 8, after a long illness, aged sixty-three. Dr. Acuff was a graduate of the University of Louisville in 1898. He was at one time Dean of the Medical Department of the Lincoln Memorial University and enjoyed a large and lucrative practice until he was forced to retire on account of ill health. He took an active interest, not only in his local county medical society, but in that of the state and national organizations, and his loss will be keenly felt.

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**NEWS NOTES AND COMMENT**

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Dr. Randolph M. Gilliam has located in Knoxville. He will limit his practice to Surgical Diagnosis.

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Dr. J. H. Revington, Dr. E. H. Gilbert, and Dr. A. M. Patterson, of Chattanooga, were in Nashville recently.

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Dr. Agnew Thomison is now associated in the practice of medicine with his father, Dr. W. F. Thomison, of Dayton.

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Announcement is made of the marriage of Dr. W. W. Wilkerson, Jr., of Nashville, to Miss Fawn Layman Parent, of Lima, Ohio.

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The Knox County Medical Society entertained the Loudon and Blount County Medical Societies with a barbecue at Beverly Hills on October 9.

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Dr. Duncan Eve, Jr., of Nashville, attended the American Association of Rail-

way Surgeons in Chicago October 16. Dr. Eve was president of the association last year.

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Dr. John E. Hall, of Nashville, announces that he is no longer associated with the firm of Drs. Hall and Hall and that he has removed his office to 203 Eighth Avenue, North.

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Dr. E. E. Northcutt has sold the Newport Hospital to Dr. W. J. Hewson and Dr. R. G. Tappen, of Newport. Dr. Northcutt is contemplating locating in Almarbra, California.

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Dr. Walter T. Swink and Dr. Conley H. Sanford, Memphis, announce the opening of offices at 1042 Madison Avenue. Their practice will be limited to diagnosis and internal medicine.

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Dr. John W. Ross has resumed the practice of medicine in Clarksville. For the past year Dr. Ross has been connected with the medical department of the United Fruit Company in Central America.

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From a pamphlet headed "Virginia Health Bulletin": "Ask your doctor about goiter prevention. Ask your grocer or druggist for table salt containing sodium iodine." Preventive medicine?

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Dr. E. C. Ellett, of Memphis, was recently chosen president of the American Academy of Ophthalmology and Oto-Laryngology at the twenty-ninth annual meeting held in Montreal, Canada, September 16.

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Work was begun on the new Medical Arts building in Memphis recently. It will be located at the corner of Madison and Fourth, and will be an eight-story structure. It will be occupied exclusively by physicians.

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Dr. Frank B. Hamilton and Dr. J. W. McClaren, of Jackson, have recently been doing post-graduate work in New York.

Dr. McClaren was admitted to Fellowship in the American College of Surgeons at its convocation in October.

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Dr. John B. Haskins, Miss Henriette Pearson, Superintendent of the Erlanger Hospital; Miss Inez Layfield, Historian of the Erlanger Hospital; Dr. H. L. Fancher, Dr. Raymond Wallace and wife, Dr. Dunbar Newell, Dr. G. M. Ellis and Dr. John B. Steele, all of Chattanooga, attended the Clinical Congress of Surgeons in New York recently.

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Dr. John B. Steele, Medical Director of the Volunteer State Life Insurance Company, Chattanooga, attended the Association of Life Insurance Medical Directors of America in New York, October 21. Dr. Steele is a member of the executive committee of this Association and discussed a paper by Dr. Francis H. McCruden, of the New England Mutual Life Insurance Company on "Selection of Risks among Individuals with Intermittent or Slight Glycosuria."

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At the recent meeting of the Walnut Log Medical Society, Dr. P. H. Stewart, of Paducah, Ky., was elected president; Dr. R. M. Little, of Martin, first vice president; Dr. W. R. Moss, of Clinton, Ky., second vice president; Dr. R. L. Motley, of Dyersburg, secretary; Dr. J. D. Brewer, of Dyersburg, treasurer. There were 118 doctors from West Kentucky and West Tennessee in attendance. A movement was launched at this meeting for this society to purchase the handsome club house at Walnut Log, on Reelfoot Lake.

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One hundred ninety-six members attended the meeting of the East Tennessee Medical Association at the recent meeting held in Harriman. The physicians of Roane County royally entertained the physicians in attendance, and a banquet was given by them at the Hotel Harriman. The following officers were elected for the ensuing year: Dr. H. M. Carter, Harriman, presi-

dent; Dr. Van Caville, Athens, vice president for lower East Tennessee; Dr. J. O. Woods, Elizabethton, vice president for upper Tennessee. Dr. G. Victor Williams, of Chattanooga, was re-elected secretary-treasurer. The next meeting will be held in Cleveland.

From the esteemed Memphis Press, as reported by the United Press:

"Kansas City, Mo., October 15.—The passing of the family doctor was predicted last night by Dr. George E. Vincent, President of the Rockefeller Foundation, in a speech before the conference of the American Child Health Association here.

"The general practitioner faces serious handicaps. He is becoming completely overshadowed by the specialist," Dr. Vincent said.

"Herbert Hoover, Secretary of Commerce, was unanimously re-elected President of the association."

A statement of fact or a threat?

## MEDICAL SOCIETIES

### SOUTHERN MEDICAL ASSOCIATION

The eighteenth annual meeting of the Southern Medical Association will be held in New Orleans, November 24-27. Special reduced rates on the certificate plan have been offered members by the railroads entering that city. Furthermore, many of the railroads are supplying special Pullmans.

The meeting at New Orleans promises to be the best in the history of that fast-growing organization. An unusually good scientific program has been prepared. This, together with the historic charm of New Orleans and its convenient location, should insure a record-breaking attendance.

### TRI-STATE MEDICAL SOCIETY

The Tri-State Medical Association of Mississippi, Arkansas and Tennessee meets at Hotel Gayoso in Memphis, November 12, 13 and 14. This will be its forty-first annual meeting. This is expected to be the greatest session in its history. Many of

the most prominent members of the medical profession in this country have appeared upon its programs in the past. However, never has as splendid a program been arranged before as the one to be presented this month. There will be papers from selected members of the Association from each state who live outside of Memphis. The meeting is to be featured this year by clinical lectures or addresses by a number of men of national prominence.

Among those appearing on the program are Dr. W. D. Haggard, of Nashville, president of the American Medical Association; Dr. W. J. Mayo, Rochester, Minn.; Dr. John L. Tierney, St. Louis; Dr. J. N. Jackson, Kansas City; Dr. J. Stewart Roberts, Atlanta; Dr. E. Wylls Andrews, Chicago; Dr. Chas. H. Mayo, Rochester, Minn.; Dr. Edward H. Skinner, Kansas City; and others are expected.

On the night of the 13th the annual dinner to the visitors will be given at Hotel Chisca by the physicians of Memphis. Dr. T. Wingate Todd, of Western Reserve University of Cleveland, will deliver his delightful after-dinner lecture, "Our Comings and Goings." This feature of the meeting is anticipated with a great deal of pleasure and is expected to be most enjoyable.

The President is elected yearly from each state in rotation. Mississippi will have that honor next year. Because of the death of this year's President, Dr. L. A. Yarbrough, of Covington, Tenn., the sessions will be presided over by Dr. B. C. Arnold, of Jackson, who is vice president for Tennessee. Other officers of the society are: Dr. W. H. Anderson, Booneville, Miss., vice-president; Dr. L. H. Stout, Brinkley, Ark., vice-president; Dr. J. A. Vaughan, Memphis, treasurer; Dr. A. F. Cooper, Memphis, secretary. The By-Laws of the Society prohibit a Memphis man being elected president, but the treasurer and secretary are always Memphis men. Back dues are never assessed against any member. It is hoped and expected the attendance this year will be large. All meetings except the dinner will be held at Hotel Gayoso.

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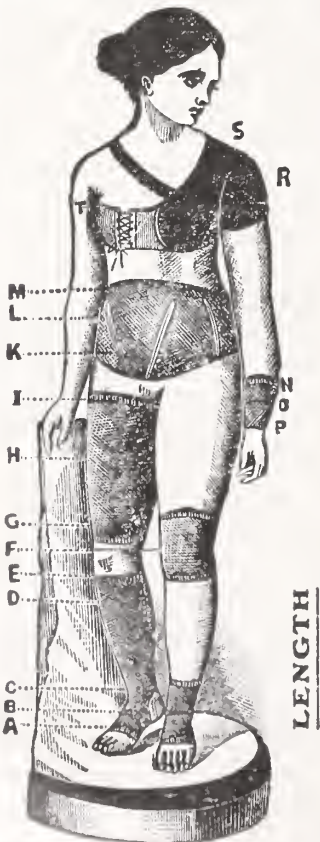
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# THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, under Direction of the Trustees

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Number 7

## WHAT IS THE FUTURE OF MEDICAL PRACTICE?\*

H. H. SHOULDERS, M.D., NASHVILLE.

**M**R. CHAIRMAN and Fellow Members of the Middle Tennessee Medical Association:

I desire first to express to you my sense of appreciation for the honor you did me in electing me your president. I prize this honor now; I shall continue to prize it through all my future years, and shall always be grateful.

I have had some difficulty in selecting a subject for this address. It has been my feeling that a scientific subject should not be selected. That feeling has driven me to select a subject that is very broad—broad enough, in fact, to allow me to roam wherever I please.

You will notice my subject is a question. It is intentionally so. It is not my purpose to answer it. The question is put with the thought that you may answer it, and if you have no answer we may make some speculations that will be of mutual interest.

We are all aware that changes are taking place in medical practice. In the last few years enough changes have taken place, certainly, to warrant us in giving some thought to what the future may be like.

The term "medical practice" is meant to embrace all the specialties of the healing art.

Some one has said that the future is mirrored in the past. In these days of rapid change this statement will not hold true. Anatole France said that the future is hidden from us all, even from those who make it. I venture the assertion that no man could have stood on the threshold of the twentieth century and reviewed all the events of all time prior to that, and from that observation have foretold the events that have transpired in the last twenty years affecting medical practice. Nor do I believe that any man can review the events of recent years and, with any degree of accuracy, foretell what is to come.

We know that radical changes have taken place, are taking place, and we can from that drift draw the conclusion that radical changes are to take place—though we are unable to visualize the form the changes will assume when completed, if, indeed, they are ever completed.

Some of the changes that have taken place are within our professional group. They are changes in doctors themselves. The public has been affected by these changes. Some of the changes have been

\*Presidential address before the Middle Tennessee Medical Association, Lewisburg, November 13, 1924.

outside our group, but the profession has been affected by them.

Among the changes that have taken place within the profession may be mentioned a rapid and enormous increase in our knowledge of the cause, prevention, and cure of diseases. This increase in knowledge has multiplied our ability to serve, many times, and we can say that humanity has been the beneficiary. The profession has become richer in its knowledge and tradition, but humanity as a whole, not the profession, has been the larger beneficiary.

The rapid increase in knowledge has made it necessary for members to limit their activities to some particular field, that they may do better service within that field. As a result of that change better service has been rendered. Humanity has been the beneficiary of this change. It has been hurtful to members of the profession at times, in all probability, but it cannot be denied that the public has been better served.

More recently there has come about an attempt at the co-ordination of all the various specialties into a unit, in the form of a hospital staff or other unit, with the view of giving to the public still better service, and I am prepared to believe that humanity has been the beneficiary of this change.

Following upon this rapid increase in knowledge has come a corresponding increase in the requirements of the State to be met before one is allowed to enter upon the practice of medicine. All this legislation has been sponsored by the medical profession—not for its protection, No! For the protection of the public. There can be no doubt that humanity has been the beneficiary.

There has been fostered a code of ethics bearing upon the relationship a doctor bears to his fellows, and upon the relationship of a doctor bears to his patient. There is not a line in that code but that seeks to safeguard the sick. These ethical principles have been criticized rather harshly oftentimes. We can safely say, how-

ever, that Heaven only knows what would happen to afflicted humanity but for the code of ethics and the way it is respected by the profession. I believe I am safe in saying that there is not a law on the statute books of any country respected as much as doctors respect the code of ethics of their profession. No effort has been made to disturb the confidential and sacred relationship between doctor and patient. No effort has ever been made to limit the rights of an afflicted person in his freedom of choice in the selection of his doctor. The profession has never attempted to arrogate to itself the power to dictate to the public. Look as carefully as you will into the dim vistas of the past, you will not see a power born of professional greed that in any way limits the freedom of mankind in its relationship to the profession. Read the history of medical progress as carefully as you will, you will not find a page darkened by the story of an attempt upon the part of organized medicine to clothe itself with power to say to any man, "This doctor you may accept; that one you must reject."

It is to the credit of the profession that efforts have been made to create standards of learning and of dealing which when lived up to by any man would merit for him the confidence of the public. That has been the objective of medicine.

The individual doctor, after complying with requirements, has been left his freedom to enjoy all the public favors his energies and capacity would earn for him.

In America the profession has become great—I dare say as great as that of any country in the world. And we should not forget that this greatness has been achieved under the same principles of liberty that have made our country as a whole great—the principle of giving to the individual all the liberties possible, consistent with good order. Under such a system some of the greatest discoveries in medicine have been made—the ones most beneficial to humanity. It is also true that some of the greatest cures of the world

in medicine have been produced. But that liberty is threatened now.

It is my firm conviction that the case of medicine, with its record of achievement, its record of fair dealing, its record of service, its record of sacrifice, its record of unselfish devotion to principle, if properly presented before the bar of public opinion, would receive on its merits expressions of confidence and commendation as the fair judgment of mankind.

Let us now consider a few of the changes that have taken place outside our group but which have affected medical practice. A number of changes might be enumerated. A number of them, too, might be embraced in one phrase: the changes in the life of the people brought about by the development of an industrial system. The United States, as a whole, has made industrial progress in the last few years that can hardly be measured. Not long ago an employer of labor worked at the bench or in the field by the side of his employe. They talked together and worked together and understood each other. The progress of our industrial system has destroyed that relationship. Capital on one hand organizes into a corporation. A concern, not an individual, becomes the employer. The employes have found it to their interest to organize into unions. By such steps a large per cent of our population has been separated into groups, which contend with each other for advantage, or for what each conceives to be right. Friendly contact is lost in the maze of organization. But you ask, "What has that to do with the practice of medicine?" Well, in its final analysis, it has everything to do with it. This new relationship between capital and labor or between the employer and the employe, has involved the practice of medicine. This new relationship has called for new legislation, defining and prescribing the obligations and liabilities of the respective groups—sometimes at the instance of one side, sometimes at the instance of the other. One form of this legislation which vitally affects medical practice is that which deals with workmen's compensation.

A few years ago such laws were unknown in this country. Today forty-two of our states have such statutes. We doctors have for years expressed a dread of the day that is to bring to us what is termed "state medicine." We still hear expressions of such a dread, when, as a matter of fact, state medicine is already here in a limited form. State medicine is here insofar as industrial injuries are concerned. And there is now a movement on foot in one state of the Union to extend the provisions of the workmen's compensation law to include all citizens, whether workmen or not. When that is done we will have full-fledged state medicine.

The compensation law that is in effect in Tennessee was enacted in 1919. The effects of its operation are now becoming acutely felt by doctors in many communities in Tennessee. The purposes and provisions of these laws vitally affect the future of medicine.

Compensation laws are laws which define and prescribe the obligations of employers to employes. You all know, of course, that under what is known as *common law* a workman injured in line of duty had the right to recover damages from his employer. This is a principle of justice which English-speaking people wrote into what has become known as *common law*. It is so old that its age is indefinite. Under *common law* an injured workman selected his physician, and the physician looked to his patient for remuneration. There was no difference in the relationship between the injured workman and his doctor than would have been the case had he been suffering from typhoid fever.

Under that system many industries found it to their advantage to employ a doctor for the purpose of treating injured workmen. The workman could accept the services of such a doctor if he elected to do so. The amount of damages due the workman by his employer was determined by agreement or by a court of justice.

These statements concerning the rights and obligations of employers and employes under *common law* are necessary to a full

appreciation of the changes that have taken place as a result of the enactment of the compensation law.

The workmen's compensation law prescribes the benefits an injured workman is to receive from his employer. The workman gives up his rights under the common law and accepts in their stead the benefits provided for in the compensation law. These benefits are:

(1) A specified sum of money per week, under certain conditions.

(2) Medical, surgical and hospital care when needed, with certain definite limitations.

(3) Funeral expenses, up to a stated amount, in the event of death.

Before going into the question of administration, it would be well to understand another condition. Before the enactment of compensation laws, employers, as a rule, would pay liability insurance companies a sum of money to assume their liabilities to employes. By so doing they would know the cost per year of their liabilities.

Now we come to the question of administering the law which, of course, involves the administration of the benefits to the injured workmen. The laws in the various states differ very widely in regard to this. In some states, the state itself collects from employers sums of money and, in turn, administers the benefits to the workmen. This is called state insurance. In other states, a responsible insurance company is allowed to collect premiums from employers and to administer the benefits to the employes. In some states, the workmen selects the physician who takes care of him. In other states the employer, or the insurance company who assumes the employer's liability, is allowed the privilege of dictating the doctor the workman must accept. This is the unfortunate state of affairs in Tennessee.

It is in the administration of this phase of the benefits that medical practice is so vitally effected. You may be surprised to know that this right to dictate the doctor a sick or injured man must accept is a right they did not even try to enforce in Europe,

except in Germany. Under the operation of this bit of progressive legislation, and in so far as it applies to our population, we have what is known as state medicine—and that with the most pernicious provision known to such legislation.

As before stated, there is in one state of the Union a movement in progress to extend the provisions of the compensation law to include all the people. What course it may take, no one knows. As to how rapidly such a sentiment will grow, no one knows. But it is fair to ask you to visualize the practice of medicine in Tennessee when the provisions of this present law are extended to include all the people. In that event the insurance company writing the insurance for any particular group would, of course, exercise its right to name the doctor the ill or injured must accept; and in that manner the old relationship between doctor and patient would be forever destroyed. In that way doctors would lose their liberty. They would be forced to bow to the dictates of the insurance company in power—or strike. The liberty of the individual doctor to earn all the public favors his ability and energy would entitle him to would be destroyed. You say that such a state is impossible—it is too palpably unfair and unjust both to the profession and the sick to ever become effective. My reply to you is that it is no more unfair when applied to one hundred per cent of the people than when applied to ten per cent of the people. It matters not whether the ten per cent are economically weak and unable to resist. The principle involved is just the same.

I would ask, if any of you, twenty years ago, would have believed that the time would ever come in Tennessee when any man, or set of men, would be given the power to dictate the doctor that any man must accept, under any condition, or as alternative, be denied the benefits to which he is entitled. Would you have believed that the day would ever come when any reputable doctor would be robbed of the fruits of his efforts to prepare to do service by the power of any man to say, "No, you

can't serve the patient who desires your services."

*You and I are not concerned with the contracts that may be entered into between two groups of citizens, so long as the rights of medicine—so long as medical freedom has been preserved. When these are threatened, it is not a simple privilege to protest; it is a solemn duty, if we prize the heritage that is ours; yea, if we prize human liberty.*

You may be surprised to know that in such states as Ohio and Massachusetts, and six other states, the right of a workman to choose his doctor has been preserved in their compensation laws. In these states the workman has complete liberty of choice in the matter of selecting the doctor who shall attend him; whereas here in Tennessee—where we have prized liberty, where we have been taught to prize it, and our own conscience dictates that it should be prized—we have allowed selfishness to rob man of liberty and destroy a sacred principle in medicine, viz, the relationship between doctor and patient.

What excuses are offered by those who have sponsored, and who today favor and defend the present law? The following are specimens of them. One is this: "Well, the man who pays the doctor's bill should dictate the doctor." That sounds logical. If Mr. A. says to Mr. B., "I will give you a bit of medical service if you will agree to accept the services of the doctor named by me," that would be perfectly all right. But, does that parallel the condition that obtains under the compensation law? It does not. In the first place, the employer is not donating or giving anything. (He is liable under the common law for the damages inflicted.) Is the employe accepting a donation? No. He had rights under the common law which he gave up in exchange for the benefits under the compensation law. No. The cases are not in any way parallel. And further: Who actually pays for the medical service? Some one says, "an insurance company." Yes, an insurance company issues the check, but the insurance company was paid by the employer to do that. Who pays the employer? Well, the cost of carrying liability insur-

ance enter into cost of doing business, just like rent, fire insurance and other fixed costs enter in. In case the business is manufacturing it enters into the cost of producing the article manufactured. The manufacturer adds to his costs a profit and then fixes the selling price of his product. In this manner these costs are passed along until society as a whole pays the bills. Each manufacturer competes on fair terms with his fellow, because the obligations and rights of each are equal.

We say, then, most emphatically that this not a case of one man saying to another, "I'll give you service if you accept my dictation." *It is the case of one economic force robbing two groups of citizens of rights on the ground of expediency and using the force of state law to accomplish this purpose.*

Another reason they give is that an ignorant workman might seek the services of incompetent or crooked doctors, and, as a consequence of poor service, both the injured workman and the employer would be injured. Now will that bear the test of analysis? It will not. Speaking broadly, we would say that if an overwhelming majority of doctors are incompetent and corrupt the whole of humanity should be protected against them—not just a portion. That contention is absurd. In the second place, the employer would always have the right to send a physician of his choice in consultation, and that would in all probability be beneficial to both the patient and his employer. It would certainly protect the employer. If continued disability were due to maltreatment of the employe's physician the employer would not be liable, and, in addition, the employe could recover for malpractice from the doctor administering the maltreatment.

It might be apropos to ask, "What if the employer or insurance company should happen to exercise bad judgment and select one of the many incompetent and unscrupulous doctors? How would the injured man fare under such a circumstance?" No, it is not a fair assumption that any small group of lay people could possibly select the good and reject the bad among doc-

tors. It is not the experience in states with liberal provisions.

It is a fair question to ask, "Who has the most at stake, the employer or the employee?" The employer's liability is at most a small sum of money. The injured man has at stake his earning capacity for all time; yea, his life, with all that means to him and to his family. No, I don't think it can be fairly assumed that the employer has more at stake than the workman that would entitled him to such rights.

Now we have disposed of two stock contentions made, let's get down to the real reason for the desire upon the part of an employer, or his insurance company, as the case may be, to hold the power to dictate the doctor an injured employee must accept. The real reason is that the measure of the employer's obligation in terms of money is determined by the extent of the employee's injuries. The degree of damage and disability is determined by the *statement of the physician in charge as to the amount of injury*; and the amount of permanent disability is determined by expert testimony, if you please; and the expert testimony is given by the physician *chosen by the employer*. It is, therefore, evident that the employer (or insurance company) feels that his interests will be much better served if he has the selection of the doctor who gives such expert testimony.

That it is to his interest to select the doctor who gives this important testimony there is no doubt. Is that a ground on which our state—the state of which you and I are citizens—is warranted in conferring such dictatorial powers upon any man or set of men as are conferred in this law? Do you believe there lives a man so just that such a power is safe in his hands, especially when his interests are involved?

It is apparent, gentlemen, that our energies have been spent almost entirely in protecting the interests of the public—on the one hand against the inroads of disease, and on the other hand against incompetency in the profession. We have failed to cling tenaciously to the principles that will keep the profession great and insure good professional service to the public.

All this future hangs about this one big principle of liberty—both to the profession and the sick. Shall it be vouchsafed or allowed to die?

Another matter of special legislation that should be mentioned is a provision in the World War Veterans' Act of 1924 which gives to all honorably discharged veterans who have seen service since 1897 the right to free hospitalization and medical and surgical treatment in government hospitals for any condition whatsoever, regardless of its origin or date of development. An honorably discharged soldier has the right to hospitalization and operation for appendicitis in a government hospital and free transportation to and from the hospital. This provision is now vitally affecting medical practice in Memphis, Tennessee, where there is located a government general hospital. If this provision lives, without modification, every city in the country must have such a hospital, and then maybe another amendment will come to broaden that provision. Who can tell what the future may mean? I leave it to you to visualize the possibilities contained in that.

Many other changes have taken place, both within and without our group of doctors, which might be mentioned. I have brought to your attention only a few of the changes that are taking place about us, and which seem, at least, to show the drift affairs are taking. I believe I see evidences sufficient to warrant the prediction that state medicine in a form that is complete is rapidly approaching. Our efforts to check it will be futile. Our efforts must be directed to the purpose of preserving the principles of liberty, both to ourselves and to the afflicted. That these principles of liberty will live I do believe. If they fail and die you and I will be in part to blame. Then we must revise our national anthem, and instead of

My country 'tis of thee,  
Sweet land of liberty,  
Of thee I sing.

it should read,

My country 'tis of thee,  
Where once mankind was free,  
Of thee I sing.

## INTESTINAL ANASTOMOSIS\*

By RICHARD A. BARR, M.D., F.A.C.S., NASHVILLE.

AS far back as 1905, Moynihan, in his work on Abdominal Operations, was moved to say, with regard to intestinal suture, "Even at the present time this field is not free from the incursions of the eager inventor." In the years that have intervened surgical opinion has become more and more solidified in favor of suture methods as opposed to mechanical appliances. The inventor is still with us, however, and, stimulated apparently by an article in *Annals of Surgery* (vol. lxxv) by the late Dr. W. S. Halsted, there have been recently many aids to suture proposed, principally for the purpose of preventing exposure and handling of the mucous lining of the viscera while sutures are being applied.

Even in the absence of danger of infection from exposure of the mucosa any simple appliance that facilitates the application of sutures is worth while, and if in addition it prevents exposure it is also desirable from the standpoint of elegance.

The clamps (Fig. 1) that I shall show you seem to me to facilitate suture, and they do prevent exposure. They may prove of value to some others who, like me, have a shrinking from seeing the interior of the stomach and bowel during anastomosis.

There are just a few technical points which I wish to emphasize in presenting the clamps. There is not the same objection to the use of linen or other non-absorbable material in through-and-through sutures of the intestine (large or small) which has been thought to preclude their use in stomach work. Even with the stomach, when sufficiently extensive partial gastrectomy has been done, there is probably little danger of gastrojejunal or other

ulcers from the use of non-absorbable material. The advantages of the non-absorbable suture due to its size and flexibility are (1) smallness of suture openings, (2) accuracy and smoothness of approximation, and (3) diminished danger of tearing bowel by needle or suture. These are very real advantages at times. Soresi has reported a case of fecal concretion forming on the free end of a silk suture hanging in the intestine. Such ill results with non-absorbable sutures will occasionally happen, but infrequently so; not enough so to offset their advantages.

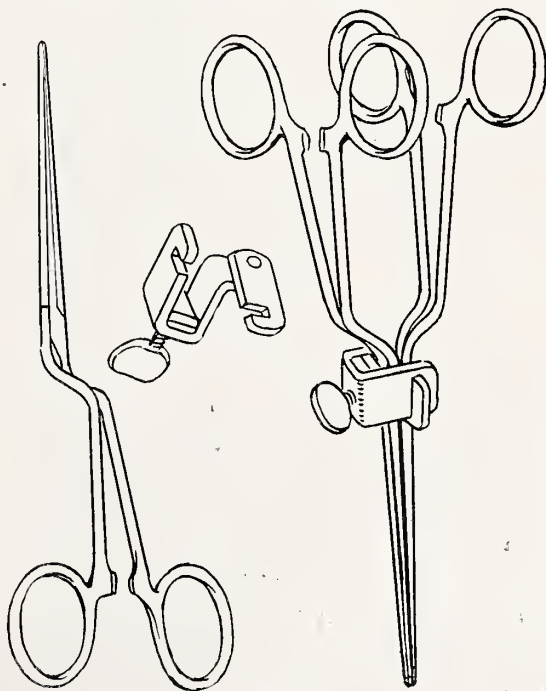


Fig. 1

In resections emphasis should be placed on ligation of the vessels in the mesentery and division of this structure before the bowel itself is divided for removal. A cautery should be used to divide the bowel wherever possible. If knife or scissors must be used the division should be made

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

from the mesenteric border to the free border, as pointed out by Horsley, and, preferably, the same instrument should not be used for division of both ends of the resected area unless resterilized. These precautions are necessary to prevent infection of the open space in the mesentery at its junction with the bowel. The risk of this infection is much less, of course, when clamps are used to control the otherwise open end of the bowel. With any method of division a crushing clamp should be used, and unless replaced by some other type should be left in place until the bowel has been divided.

Much has been written in the past about the deadly mesenteric border in end-to-end anastomosis, but recent literature for

Such a suture forces together the muscular wall of the bowel, two non-epithelialized surfaces of the peritoneum and whatever cellular tissue there happens to be in the open mesenteric space. More than this, it ties off some of the vasa recta which lie in the mesenteric space, and to that extent jeopardizes the blood supply of the bowel end. Furthermore, the suture passes directly from the bowel lumen into the cellular interval of the mesentery. All of this produces a state of affairs which it seems to me should increase rather than diminish the deadliness of the cellular interval.

The Connell suture, as frequently used astride the mesentery, is a great improvement on this special suture, though it can

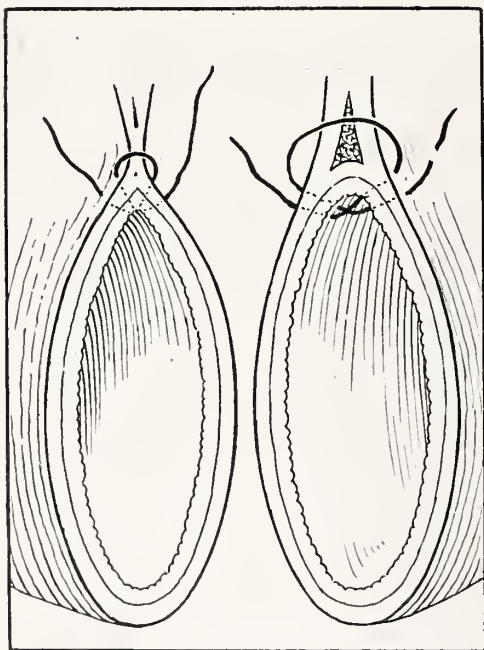


Fig. 2

the most part makes no reference to it, and little really helpful advice has been given as to how its dangers can be avoided. A point that seems to have escaped general notice is that the open space between the two leaves of the mesentery at the bowel border cannot be safely obliterated by sutures which merely bring the opposing mesenteric and bowel surfaces together. An example of this type of suture, especially devised by its author to close the mesenteric space, is shown in Fig. 2.

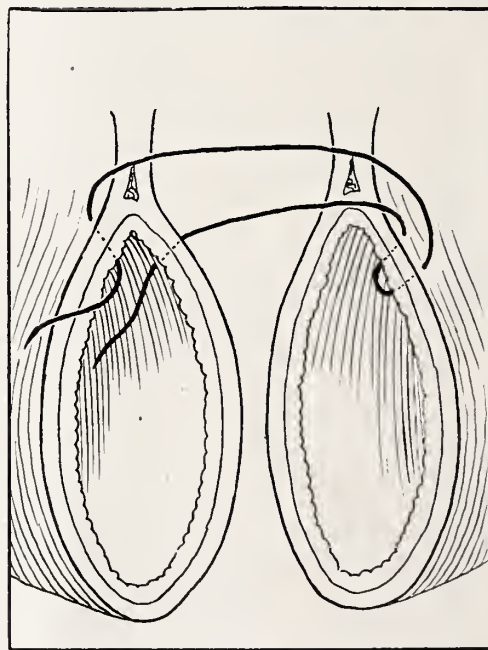


Fig. 4

only by good luck provide the essential feature of safety in end-to-end anastomosis, which is that there must be free, epithelialized surface of peritoneum on at least one side at every point of union, and that this peritoneum must have a close, not a floating, attachment to the muscular coat of the bowel beneath.

If an effort is to be made to close the mesenteric space by suture, care must be exercised to roll in the cut edges of the mesentery in such a way as to insure bring-

ing the two epithelialized surfaces in contact with each other and with the bowel wall. This can be done in the upper bowel, where the interval is narrow, by a fine mattress suture passed, as is shown in Fig. 3. This stitch, when used, should be placed before the bowel itself is divided. There are two reasons for this. It closes the space against infection and it pulls back the mesentery in the long axis of the bowel, leaving an exposed space on the muscular coat, the extent of which should be put in evidence before the exact line of division of the bowel is determined.

Since in fat individuals the mesenteric gap of the lower ileum covers one-fourth or more of the circumference of the bowel,

portray it in the beautiful illustrations accompanying them, so I do not think it out of place to re-emphasize it.

Care should be exercised to avoid, as far as possible, passing sutures from the lumen of the bowel into or through the cellular space between the leaves of the mesentery or mesocolon. However, if the interval is wide, this cannot always be done without catching too much tissue in the loop of the suture which would have to straddle it, so to speak. In the case of a wide unperitonized space the sutures must either boldly enter the cellular interval or a short stump of bowel, as shown in Fig. 6, must be left projecting beyond the mesentery to hold the through-and-through sutures. The lat-

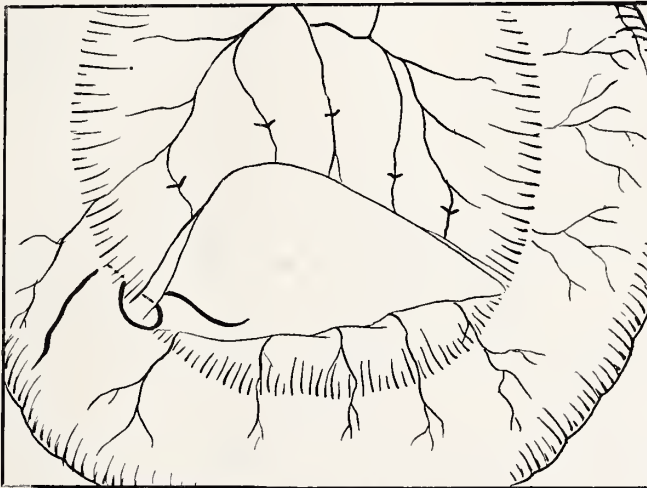


Fig. 3

it is practically impossible to close space in this region by inverting the mesentery. Here it is necessary to adopt the suggestion made many years ago by Dawbarn, of New York, to rotate the bowel around its long axis sufficiently to bring the mesenteric space of one end against a peritonized area of the other. When clamps are not used this rotation can be arranged for by passing first a Connell section, as shown in Fig. 4. This rotation is also essential (and for the same reason) in end-to-end anastomosis of colon to colon or of small intestine to colon. In spite of the importance, not to say necessity, of rotation, all mention of it is left out of the text of many recent articles, and no effort is made to

ter plan is probably best when an additional row of seromuscular sutures is going to be used, for then one is not interested in the blood supply of the projecting stump; in fact, its removal by sloughing would hasten restoration of the lumen of the gut to its normal size.

Most surgeons have been forced by experience to conclude that there is little danger attached to knotting through-and-through sutures on the peritoneal surface of an anastomosis. Of course, it is not possible to keep the mucosa concealed and at the same time tie sutures on it. The use of clamps such as I am showing involves tying all sutures on the outside as a matter of course. For this reason, I use,

in addition to the through-and-through, reinforcing seromuscular sutures, and in case of the colon two layers of them where this is possible.

The use of forceps for control of the lumina of the bowel until practical completion of suturing carries no new suggestion. Foster K. Collins, of Los Angeles, in *Annals of Surgery* (1922, vol. lxxv), advises the use of Kocher clamps over a ligature placed in the groove left by the crushing clamp. These clamps are entirely too heavy for use in the lower ileum, where the caliber of the bowel is frequently no larger than the index finger. The gut cannot be brought together over them.

The forceps here presented have the ad-

tion. After the mesentery has been ligated and divided (or divided and ligated according to the preference of the operator), if the mesenteric space is to be taken care of by rotation (I prefer this) a pair of Allis forceps catches the sound gut to one side of the mesenteric reflection, and just beyond (one-fourth to one-half inch) the line of resection at one end (Fig. 5). The intestine is next crushed in the line of resection with any heavy clamp (I prefer a Ferguson or Ferguson-Halsted to the Payr).

After crushing, one of the bayonet clamps is set in the groove so that its tip just comes to the edge of the gut opposite the free border. In putting on the bayonet clamp the tips are just brought together at

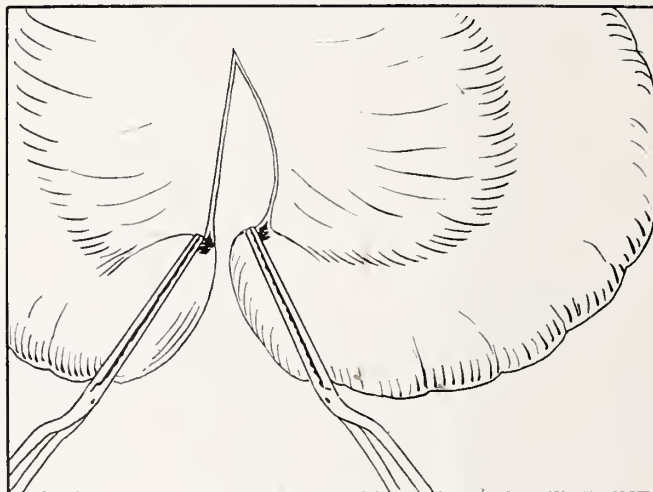


Fig. 5

vantage of being very slender, of having a flat side so they can be securely clamped together, of being bayonet-shaped, which makes it possible to get the fingers into the loops of one clamp for removal without getting them caught in the loops of the other clamp, and of having only one serration, which makes them easy of removal without spreading the blades. They come off with an ease that is very gratifying. There is little special technic in connection with the use of the forceps.

Damaged gut is kept covered with gauze sponges and rubber-covered clamps are used to control the proximal and distal bowel lumen, which has been stripped of its contents, as in any other method of resec-

tion. After the mesentery has been ligated and divided (or divided and ligated according to the preference of the operator), if the mesenteric space is to be taken care of by rotation (I prefer this) a pair of Allis forceps catches the sound gut to one side of the mesenteric reflection, and just beyond (one-fourth to one-half inch) the line of resection at one end (Fig. 5). The intestine is next crushed in the line of resection with any heavy clamp (I prefer a Ferguson or Ferguson-Halsted to the Payr). After crushing, one of the bayonet clamps is set in the groove so that its tip just comes to the edge of the gut opposite the free border. In putting on the bayonet clamp the tips are just brought together at

the mesenteric border and then the free border of the bowel is pushed toward the mesenteric border so as to gather (Fig 7), to use a dressmakers' term, the crushed area in the grip of the clamp when it is tightened. The effect is something like that of tying a ligature around the bowel and produces a fulness in the bowel beyond the clamp which facilitates suturing. When the lumina of the two ends are different in size, one may be gathered more than the other, and thus entirely relieve the difficulty frequently experienced in fitting such unequal stumps together.

one-sixteenth inch thick at the toe, while they are one-eighth inch wide and thick at the heel. The blades have the Carmalt longitudinal serrations. Any kind of a clamp is put on the gut to be resected with just room between it and the bayonet clamps for cautery or other instrument that is to be used. The same thing is repeated on the opposite end, except that the Allis forceps are set on the opposite side of the mesentery (Fig. 5). Division of the gut is now made, the resected area removed, and the bayonet clamps brought together (Fig. 7) and held accurately and firmly by the little clamp pictured in Fig. 1. As the result of placing the Allis forceps on opposite sides of the mesentery when the bayonet

is not too wide to be bridged by a single suture (Fig. 7). If the space is too wide for this, the suture takes a proper bite, coming out at the margin of the posterior leaf. The suture is continued, through and through, with stitches taken at right angles to the short axis of the bowel. Some may prefer to put in this suture as a continued Connell, but this type of continued suture is not as hemostatic as the one described.

When the suture is stopped by the handles of the clamps it is tied by looping and the end left long. A similar suture is placed on the opposite side, and when it reaches the clamps these are removed and an additional stitch or two taken to close the space left by their removal. The free

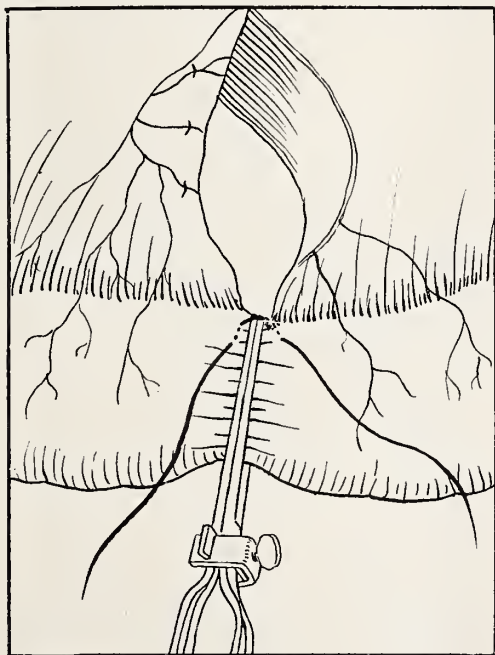


Fig. 6

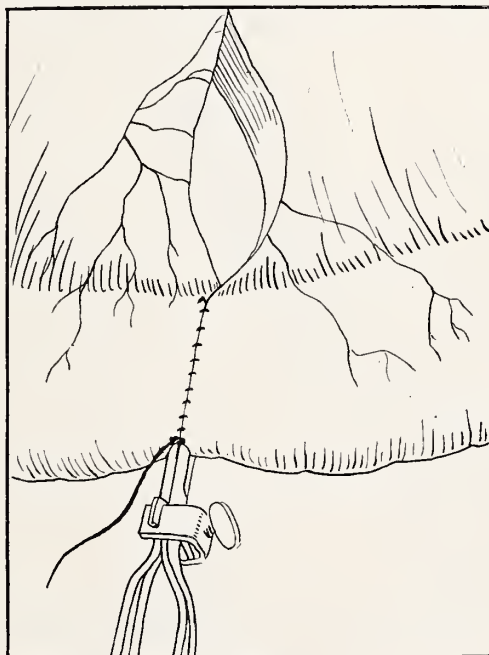


Fig. 7

clamps are brought together, the mesenteric spaces will not be approximated, but the gut will be rotated sufficiently to bring each space in contact with a peritonized segment of the opposite end of intestine (Fig. 7).

For the first row of sutures I prefer fine linen, Halsted's interrupted mattress, or, preferably, a continued suture which is begun at the mesenteric border as a mattress suture with one loop bridging entirely across under the edge of the mesentery of one end of the bowel, provided the space

ends of the two sutures are then tied together and cut short. The seromuscular reinforcing suture is of fine catgut and starts at the free border as a Lembert (Fig 8.) It is continued as a Cushing suture over one side of the anastomosis, and on reaching the mesenteric border is continued (Fig. 9), for the purpose of turning in one cut edge of mesentery, and in long resections the slack of divided mesentery (Fig. 7) may be divided between the two surfaces in such a way as to make the mesenteric stump much smoother than

when the edges are sutured together with the inevitably resulting projecting triangle.

When this suture has been completed on one side a needle is threaded on the free end of the suture, which has been left long at the convex border of the bowel, the opposite side of the anastomosis reinforced and the opposing cut edge of mesentery sutured as described above.

The clamps may be used but with somewhat less facility and simplicity of application for lateral anastomosis, including gastrojejunostomy. In lateral anastomosis, except when both ends of the bowel can be freely moved in any axis, the posterior sutures must be placed before the bay-

placing of the anterior suture lines.

Discussion of lateral versus end-to-end anastomosis of the small bowel is probably useless if care is taken in the former to see that no long stumps of closed ends are left projecting beyond the opening. A lateral anastomosis can probably be made with more certainty of security by the inexperienced operator, but it is largely a matter to be decided by taste and temperament.

Where the colon is involved there is a difference. The looseness of attachment of the peritoneal coat of the colon and the complete absence of this coat over wide areas add to the difficulty of securing peritonization, so to speak, of the suture line.

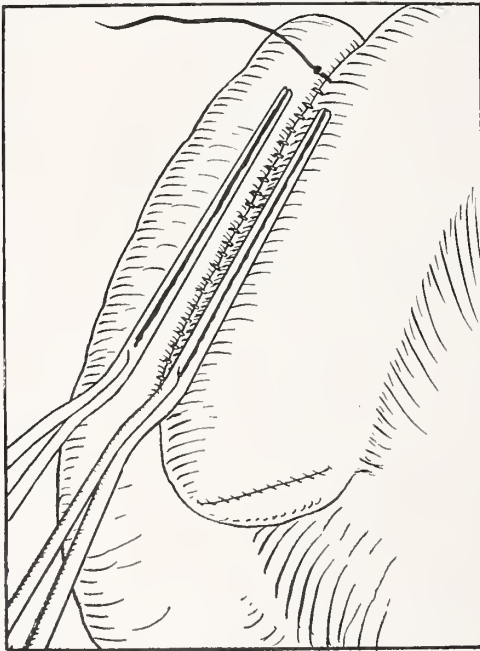


Fig. 8

onet clamps are fixed together. This may be done even before any clamps are applied, but I prefer to apply the crushing clamps (two are needed here) first, except in gastrojejunostomy, where the posterior seromuscular suture is applied first; incisions are then made in both viscera down to the submucous coat, to which the crushing clamps are applied (including, of course, the mucosa). The posterior through-and-through suture is placed before the crushing clamps are removed, the bayonet clamps only being used during the

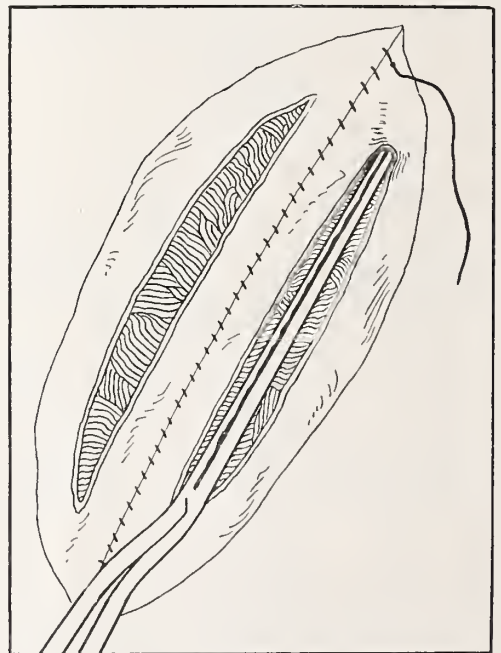


Fig. 9

Lack of sufficient bowel for overlapping will at times make end-to-end union of the colon imperative. This form of union is always more pleasing to the surgical taste, and it would be my own preference except for the above-mentioned difficulties. Then, too, it is always possible, when lateral anastomosis of the colon is made, to put in a second line of reinforcing seromuscular sutures with their added protection.

When there is plenty of colon for overlapping, I make a lateral union and have a

feeling of greater safety from danger of possible leakage at the suture line, though surgically and physiologically the work is less satisfying than end-to-end connection.

#### DISCUSSION.

DR. J. HUNTER PEAK, Louisville, Ky.: Gut surgery—I can remember very well how I used to dread the work on account of the emphasis placed on certain technic that I was afraid I would never accomplish as we found it in textbooks, and the great scare that we all had, and which Dr. Barr seems still to be laboring under, of the space that we find between the peritoneal coats of the mesentery as it passes around the gut. Until I had operated a great number of times and frequently under adverse circumstances where I could not do the things I wanted to do and had to do the best I could, for instance in the large bowel where I had to do an anastomosis and had very little bowel to do it with, or where there was not very much intestine and I had to do the best I could, and then after getting splendid results from what I had done I began to lose a considerable amount of the fright the textbooks had put into me. I do not think now that it is a very difficult thing to do an anastomosis, nor do I think it is a very difficult thing to do gut suturing. I do not think there is so much danger in the small bowel of the sutures including the mucosa. I do not see how it can be helped sometimes, with the small folds of the bowel in the way, and I do not think it would make very much difference whether it was included or not. You can put the suture all the way through as well as not.

There is one thing that I do wish to say about the kind of suture, a kind that is standardized and stabilized, that you can depend upon because of your experience with it, and then use a No. 1 ten-day chromic suture. I think you can do about anything you wish to with a No. 1 suture. Perhaps a smaller one would be just as satisfactory. If the knot is tied surgically I do not think it makes any difference whether it is on the outside or the inside. I do not see how you could do a gastrojejunostomy without tying the first line of knots on the inside.

I think Dr. Barr has presented us with a suture that if he is afraid, and I can understand why—you know the peritoneum is about as easily infected as the skin. We have no idea how much the peritoneum is able to take care of in the way of infection and in the way of soiling in doing gut work. In working on the smaller bowel it is remarkable how much work can be done without getting any infection and what splendid results can be obtained. Did you ever know how much surgery can be done in gunshot wounds, if you get to them early, in the small bowel and the

patients all get well? Did you ever notice how little surgery can be done upon the large bowel? I think in the large bowel we should be exceedingly careful not to soil the peritoneal cavity.

The manner of suturing that Dr. Barr has shown us is very interesting, and I appreciate it. I would be glad to see the forceps if he has them. I use an ordinary gut forceps. I think the end-to-end anastomosis is very excellent if you have gut enough to do it. Stricture frequently occurs when one does the end-to-end anastomosis. I have done the other more often, the lateral side-to-side anastomosis. There is no danger of stricture or of the opening becoming so small that there will not be proper drainage. I believe the lateral anastomosis is far safer than the end-to-end.

DR. EDWARD T. NEWELL, Chattanooga: I do not know that I can add anything to this discussion. I have enjoyed hearing the paper and seeing the pictures of the forceps of Dr. Barr. I understand they are of his own design and should like to see the forceps.

I agree with Dr. Barr that one has to be very careful about puncturing the mucosa, not only in end-to-end anastomosis, but in the much more frequent operation of appendectomy in applying a pursestring suture around the base of the appendix. I believe in many cases where we have had an apparently normal appendix but get an infection after the appendectomy, that it is due to this factor. In putting the pursestring suture around, unless we are very careful it is easy to puncture the mucosa and get into the lumen of the bowel. I think I have had several cases in which I have introduced the pursestring too rapidly and unconsciously punctured the mucosa.

There is a good deal in what Dr. Barr has said about rotating the bowel so that the peritoneal coat will come in contact with the muscle coat. This point is very well taken, and worthy of consideration. Any instrument or improvement in technic that will help us in this work should be well received.

DR. RICHARD A. BARR, Nashville (closing): Because of the fact that both speakers emphasized my apparent dislike to puncture the mucous membrane, I will repeat what I said very positively, that my first row of sutures is made up of through and through sutures. I wish to be sure of holding the gut firmly together during the period of healing, and my first row is always deliberately through and through. I warned against what I think is a real danger. A man who can do successful surgery for years and years without having any regard for the mesentery need not pay any attention to my suggestion, but some of the younger men may not be so fortunate. I learned about the danger of the mesenteric interval before I did any surgery. I would not willingly pass a needle into the cellular interval of

the mesentery. I try to avoid that. You can start your loop on one side of the mesentery and come out on the opposite side. The mesenteric intervals on the gut are not epithelized and will not grow together any more readily than will cellular tissue anywhere else. The objection to viewing and handling the mucosa while suturing is a more esthetic matter than anything else, but rotation of the gut is the real point that appeals

to me in end-to-end anastomosis. In the colon it is often difficult to get enough tissue to overlap for side to side union, and you often have spaces on the colon of an inch or more which are absolutely devoid of peritoneum. If you do not rotate these areas so as to bring them in contact with the epithelized surfaces on the opposite end you may expect to have a fecal fistula at the very least.

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## TREATMENT OF CHRONIC ARTHRITIS OTHER THAN THE REMOVAL OF THE CAUSE\*

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GEORGE K. CARPENTER, M.D., NASHVILLE.

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**T**HERE are numerous classifications of the various arthritides, both clinically and pathologically. The object of this paper, however, is to discuss the treatment of chronic arthritis, especially those cases of long standing with much disability and deformity of multiple joints. During recent years much has been written regarding the subject of focal infection, and it would be presumptuous to make further comment other than that in every case of chronic arthritis any possible focus of infection or toxemia should be sought and eradicated whether it be from the mouth, throat, sinuses, gastro-intestinal tract, gall bladder, pelvis or genito-urinary tract.

We all, no doubt, appreciate the value of removing the cause if such is possible and, no doubt, we have all seen cases in which the cause, if found, was removed; but to our sorrow the patient failed to get well. The treatment of chronic arthritis other than the removal of the cause is in my mind just as important as removing the cause, for we can always treat the patient no matter how obscure the etiology may be. If a patient with pulmonary tuberculosis develops a tubercular joint we are not content to merely treat the primary focus. When a patient with diseased tonsils develops a chronic arthritis why should we be content to confine our treatment to the removal of the tonsils?

The salicylates and allied preparations have long been used, but that they have no curative power is well recognized. Baking and massage have been found to be of much benefit when properly used, but they are not a cure-all. Intravenous and intramuscular injections of vaccines, specific and non-specific, of foreign proteins (1) and of sulphur (2) have been used rather extensively by numerous observers, some reporting favorable results and others being unable to see that their patients were benefited. No doubt some cases have been helped by intravenous therapy but, unfortunately, my experience with these methods have been so discouraging that I have abandoned them altogether. The chronic arthritic of several years standing is willing to grasp at the last straw and as intravenous medication is considered by the laymen as a sort of super-human treatment, they are often, after failure of this treatment, inclined to believe that their case is hopeless and become greatly discouraged. Varieties of diets have been employed, but diet, I believe, is merely an adjunct in the treatment of chronic arthritis and varies according to both the individual and the type of the arthritic condition. Pember-ton (3) reports a low carbohydrate toler-

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\*Read before the Middle Tennessee Medical Association, Lewisburg, November 13-14, 1924.

ance in a high percentage of cases with considerable improvement by using a restricted diet with low carbohydrate intake and a relative increase in the fatty foods to raise the total calories.

We have all noted that sooner or later, even the very severe cases reach the point when they are free from active symptoms such as pain, tenderness and swelling; and it is the deformity and stiffness that persist creating the permanent disability. Even though a patient becomes bedridden, it is rarely ever that they do not retain considerable function in the hands and arms, and it is nearly always the joints of the upper extremities that become free from symptoms, usually long before the joints of the lower extremities. In an arthritic with deformity of the knee or foot, weight bearing should not be permitted, for the resultant trauma will surely add further damage to the joint. Once the deformity is corrected, the patient should use crutches as long as there is any discomfort on walking.

In the acute stages joint function should be preserved as much as possible and I believe that splinting is rarely ever needed and should be avoided whenever possible. I have seen the severe pains of many joints entirely disappear after a few weeks of motion and the patient gain in general condition. All motion should be active and not passive, and pushed to the point of pain. Motion that produces acuteness in the joint has been too active and must be omitted until this acuteness has subsided and then gradually begun all over again and worked up until active motion can be carried out in all directions. I believe it would be ideal if we could put all of our early cases of multiple arthritis to bed, and with the aid of local heat and the salicylates or allied preparations, put the involved joints through as complete a range of motion as is possible many times daily. I have found this plan feasible in several cases of so-called Still's disease, or chronic non-tuberculous arthritis of children, with very excellent results. Active motion, in my hands, has caused the acuteness to subside rather

than to be aggravated, and I am a firm believer in its discriminate use.

The orthopedic surgeon does not get the case, as a rule, until late; usually when the process has been arrested and we are called upon to correct the resulting deformity. I have seen several cases lately who could walk but for their stiffness and contractures. Luckily, most of the deformity is due to periarticular changes rather than bony changes, and they are in the main easily amenable to treatment.

Knee flexion is the condition which often calls for treatment and they are to be straightened gradually, for by so doing the joint motion is preserved and the result is a useful knee. There is no objection to beginning with forcible straightening under anaesthesia, but too much must not be done at the onset, for there may result an exacerbation of the process or irreparable injury to the joint cartilage. We must bear in mind that a bad arthritic is a poor anaesthetic risk, as their vitality is usually at a very low ebb. By a series of wedging plasters it is possible to straighten the knee gradually and at the same time to daily put the knee through its nearly complete range of motion so that when the knee is straight the motion has been preserved. In certain classes, where co-operation is difficult to obtain, and where time is a factor for economic reasons, there is no objection to a serviceable stiff knee. This may be obtained within a shorter time and with less effort on the part of the patient. In cases with right angle flexion that still have ten to twenty degrees of motion and especially when there are bony changes, I have done supra-condylar osteotomies of the femurs and straightened the legs with the motion so placed as to be of benefit in walking. It is of great importance to have the explicit co-operation of the patient and the knowledge that they are willing to go through with the treatment, for I know of no greater calamity than to start with a wheel chair patient and end with a bed patient.

The hip joint presents greater problems but fortunately, ankylosed hips or perma-

nent flexed hips are not the rule. We do occasionally see the wheel chair patient of long duration with flexed hips as well as flexed knees. Again, let me warn you not to attempt to get these patients walking unless you have much assurance that your efforts are to be successful. As a rule the hips are flexed due to the fact that they have so long maintained the sitting posture, and as the knees are straightened the weight of the plasters are often sufficient to overcome the periarticular contractures. In rare instances, however, it is necessary to use forcible correction or, more rarely, the so-called Soutter fasciotomy operation.

It is in the hip joint that we are so likely to be confronted with bony changes that may necessitate an open operation. In single hips we are, of course, justified in manipulation under anaesthesia with a retention plaster of long enough duration to obtain ankylosis in a useful position. In the bilateral cases we must employ such a procedure as will assure us of motion which may mean an arthroplasty, resection of the head or, in suitable cases, a mere removal of bony spurs. Before resorting to the open operation, always be sure that you cannot succeed by the more conservative methods.

The joints of the upper extremities do not often call for correction of deformities for the patient has kept up active motion without trauma, and the result is that the function is at least partially retained. Joints ankylosed in an improper position, so that disability is the result, may be for-

cibly broken up and ankylosed in a useful position. When some motion is present it can practically always be increased by active exercises, together with passive motion, if the pain is not too acute. Manipulations, under anaesthesia, will often be of great benefit but, fortunately, are not often required. Elbow and shoulder arthroplasties, in cases with bony ankylosis of long duration with no evidence of activity, are justifiable operations but are rarely called for in the chronic arthritis.

In conclusion: Every chronic arthritic should be examined carefully for any possible focus of infection or toxemia, and this often calls for the combined efforts of the dentist, ear, nose and throat specialist, internist, general surgeon, gynecologist and urologist; and let it be said that no stone should be left unturned and the patient should be treated for any unnatural condition. However, when all is said and done, it means usually a sacrifice of many teeth and tonsils and often bitter disappointment to both the patient and physician. We must early institute treatment directed towards the joints themselves and I believe the patient will not only recover more quickly but with less disability, and consequently there will result less work for the orthopedic surgeon from such a prevalent and deforming disease.

1. Miller and Lusk, J. A. M. A., 67:2010, December 10, 1916.

2. Reiman and Pucher, Am. J. M. Sc., July, 924.

3. Pemberton, Am. J. M. Sc., 153:678-1927.

## INDIGESTION\*

LYLE MOTLEY, M.D., F.A.C.P., DYERSBURG.

**I**NDIGESTION is a term that is used rather loosely by patients to express a variety of subjective symptoms more or less directly referable to the stomach according to their individual ideas of that organ's location. The public considers indigestion a disease entity instead of a symptom, and patients are entirely satisfied with the simple diagnosis of indigestion. And the number of patients who are given prescriptions for "indigestion mixtures" would indicate that at least a portion of the medical profession is satisfied to treat indigestion as a clinical entity instead of looking for the condition that is the basis of the symptom. So at the outset let us plainly state that the various subjective sensations that are classed under the head of indigestion are merely symptoms only, and that the rational treatment consists in determining the underlying causes.

In this paper only the chronic cases of indigestion will be considered. That is, those cases that have lasted more than a day or two. There are a large number of cases that will have digestive disturbances for a day or two as a result of unusual dietary indiscretions, acute gastro-intestinal infections, acute toxemias, etc. These are usually quickly amenable to strict dietary regulation, and rest for a day or two and do not come within the class of cases that this discussion includes.

Before we come to the consideration of chronic indigestion let me pay my respects to the so-called "acute indigestion," a diagnosis that is frequently made. Such a diagnosis is usually made to cover our inability to discover the actual conditions present, and entirely satisfies the patient and relatives. Such a condition is usually actually one of gall stone colic, acute appendicitis,

acute dilatation of the stomach, temporary intestinal obstruction, abdominal angina, or some similar crisis. I have discussed this question with authorities and searched the literature for years, and as a result I have no hesitancy in saying that acute indigestion is a diagnosis that should not be allowed to appear on a death certificate. Digestion is a chemical and motor process, and I cannot conceive of the lack of a chemical reaction being "acute," or of a perversion of motor function being of such a character as to cause death. I venture to say that a postmortem examination on all patients dying from acute indigestion would reveal in a large number of cases that the patients died from acute cardiovascular disturbance.

The patient who complains of indigestion for days, weeks and months has something wrong with him, and I will admit that the discussion of the various causes in all their aspects would only be covered adequately by a fairly large series of lectures on clinical medicine. The stomach has aptly been termed the alarm box of the abdomen, but it would not be far amiss to term it the alarm box of the entire body, as nearly every condition from brain tumor to arteriosclerosis expresses itself sooner or later in symptoms referable to the gastro-intestinal tract.

The causes of indigestion are easily divided into gastric and extragastric but intraabdominal and extraabdominal. A careful and painstaking recorded history will usually direct the attention to the extraabdominal conditions, as for instance tuberculosis, which is the most frequent extraabdominal cause of indigestion. But by far the majority of causes are intraabdominal and extragastric. The causes of indigestion may be classified as follows, roughly in the order of their frequency:

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1. Extragastric and intraabdominal conditions:

- (a) Cholecystitis and cholelithiasis.
- (b) Inflammations and functional anomalies of the colon, such as colitis, proctitis, spastic and atonic constipation, etc.
- (c) Chronic appendicitis.
- (d) The toxemia from chronic pelvic infections.
- (e) Diseases of the pancreas.
- (f) Inflammations and degenerations of the kidneys.
- (g) Cirrhosis of the liver, hepatitis, cancer of the liver, and the various spleen-like syndromes such as Banti's disease.

2. Extra-abdominal conditions.

- (a) Tuberculosis.
- (b) Faulty habits.
- (c) Psychic causes.
- (d) Toxemia from focal infections—pyorrhea, spinal dental abscesses, tonsils, sinuses, etc.
- (e) Cardio-vascular diseases—chronic heart failure, arteriosclerosis, aortitis.

3. Gastric conditions. For the purpose of discussion the duodenum will be included under this head.

- (a) Anomalies of secretory or motor function—achylia, hyperchlorhydria, atony, etc.
- (b) Ulcer and cancer.
- (c) Duodenitis and duodenal ulcer.
- (d) Chronic gastritis (rare).

From the foregoing it is evident that a patient with indigestion should be thoroughly and minutely studied from every possible angle, and if we badger our patients into admission of some dietary indiscretion, look at his tongue, give him a "round" of purgative and some indigestion mixture containing pepsin, tell him to quit eating whatever he happens to blame at the time for his trouble, we have grossly neglected him. In the examination of a gastrointestinal patient a properly taken history is a very large and important part, and let me say here that the taking of a history is an art in itself. In the history the nature of the complaint should be accurately determined, whether actual pain or merely discomfort, the character of the

pain or discomfort and its relation to eating, its exact location, whether or not it radiates and where, what factors relieve or aggravate it, such as rest, exercise, etc., what time of day it appears, and whether or not associated with nausea or vomiting. For instance, in cases of mild anginal pains that are referred to the epigastrium, the discomfort or pain is usually aggravated or precipitated by a heavy meal, but inquiry will establish its closer relation to effort. Following the history the patient should be stripped and an exhaustive physical examination should follow. And in those cases where it is probable from the history and preliminary examination that the condition is intraabdominal, the exploration of the rectum and sigmoid with a well-lighted inflating sigmoidoscope should be a routine part of the physical examination. No possible site of infection should be left unexplored. The tonsils, teeth, gums, sinuses, cervix and tubes in women and prostate in men. The tonsils should not be merely looked at, but should be everted by pressure on the pillars. The prostate should be examined regardless of the absence of a gonorrheal history.

As to methods of precision which should follow the physical examination. There can be too much detailed laboratory work done, with resulting wasted effort, and there can be, and frequently is, too little done. And in the interpretation of laboratory and x-ray results in gastrointestinal cases, as in all others, a generous admixture of common sense is a desideratum of the highest importance.

In our experience the following procedures should be done routinely on all gastrointestinal cases:

- 1. Gastric analysis.
- 2. White and red blood cell count.
- 3. Urinalysis.
- 4. Wasserman test.
- 5. X-ray studies of stomach and duodenum and twenty-four-hour films of colon.

According to the indications shown by the history and physical examination the following procedures are frequently done:

1. Chemical and microscopic studies of feces.

2. Studies of ferments of pancreas.

3. X-ray of teeth.

In doubtful cases and according to indications the following are occasionally done:

1. X-ray of gall bladder after intravenous injection the sodium salt of phenoltetrachlorphthalein.

2. X-ray of sinuses.

3. Stereoscopic x-ray films of chest.

4. Studies of liver function by Widal's hemoclastic method and by Rosenthal's phenoltetrachlorphthalein method.

In the consideration of the various causes of indigestion it is not necessary to dwell on the diseases of the gall bladder, as they are very common at all ages, and Dr. Swink will fully cover this phase of the question in his paper.

I want to stress a neglected and seldom considered condition that plays a large part in the production of gastrointestinal symptoms, namely, inflammations and functional anomalies of the colon, particularly the left half of it. This organ is frequently the site of chronic inflammations that produce no local symptoms recognizable as such. And in this connection I must say that frequently much of this is due to the habitual and pernicious use of purgatives, laxatives and enemata, often by direction of a doctor I am sorry to say, for the relief of real or fancied constipation. The proper consideration of the bugaboos of constipation and purgatives would occupy a long paper themselves and will not be discussed at length here. These inflammations of the colon cause digestive symptoms both by reflex and often by toxic action as a focus of infection. There are many cases cured by the simple means of stopping the habitual use of purgatives and correcting faulty habits. The anomaly of motor function in the colon that is most frequently to blame is spasticity, and this is easily discovered in the routine x-ray and sigmoidoscopic examinations.

A diagnosis of chronic appendicitis should be made very cautiously and not

often, and then only after a fairly positive demonstration of the condition has been made and all other usual causes of indigestion eliminated. It is often too easy to elicit tenderness over McBurney's point and tell the patient to have his appendix removed. But it is not so comforting to have the patient return later with the same old symptoms and with the addition of the shock both psychic and traumatic that an anaesthetic and operation necessarily entails. I believe that a previous acute attack of appendicitis is a factor that should be nearly always present before a diagnosis of chronic appendicitis should be made. Of course the patient does not always know that he has had acute appendicitis, but proper questioning will usually elicit a history of "cramp colic," "bilious fever," or other illness that can be interpreted as an acute attack. In addition to the local tenderness it is greatly desirable to visualize the appendix by x-ray, and the tenderness should be demonstrated by pressure under the fluoroscope to be directly over the appendix, and should be constant at various examinations. The appendix should retain barium at least eighteen hours after the cecum has emptied and should usually be segmented. The longer the appendix retains barium the surer one can be of the diagnosis.

The actual gastric diseases that cause indigestion are few and seldom encountered in comparison with the other causes. I shall only refer to them by emphasizing the extreme care that should be exercised in investigating the patient around forty or over who with previous good health develops indigestion of any degree that lasts more than a day or two, whether there is apparent obvious cause or not. Every effort should be made to find cancer, and if unsuccessful he should be kept under observation and repeated examinations made. The patient who has gone with a cancer until the signs and symptoms are distinctive has gone beyond the need of a doctor.

Hyperchlohydria as a condition itself is not common, but is usually associated with

chronic cholecystitis or ulcer, and care must be exercised before the case is labeled simple hyperchlohydria. Achylia unassociated with other diseases is as uncommon as hyperchlohydria, and in an individual past thirty-five who has this condition a thorough blood and neurologic study should be made and a close search made for evidences of pernicious anemia. As an absence of hydrochloric acid is a rather constant accompaniment of cancer of the stomach, we should be doubly cautious with a patient of this age.

The extraabdominal causes of indigestion are very important as a surprisingly large number of early tuberculosis cases will complain of indigestion as the presenting symptom, and only a careful history will bring out the slight associated symptoms that will point toward the real trouble, and even if we fail to elicit other symptoms of tuberculosis, we should carefully search for evidences of early tuberculosis when the character of the digestive disturbances suggests a toxic cause.

A long discussion would be required to properly cover the subject of faulty habits and psychic causes of indigestion. But I might say in passing that every aspect of the patient's working, eating and living habits should be investigated, as well as his recreations, hobbies and means of relaxation.

The psychic factor in indigestion is most important, and is a frequent cause of indigestion itself and of the persistence of the symptoms after the actual primary cause has been removed. We cannot and should not try to encroach on the rightful territory of the psychologist, but in many cases a sympathetic study of our patient will enable us to straighten out the many warped ideas, repressions and subconscious mental conflicts that express themselves in digestive disturbances. There is no such thing as nervous indigestion, but emotional indigestion is not an uncommon condition, and of course the emotional conflicts

underlying it are always unknown to the patient.

The treatment of indigestion can be summarized in a few words. Treat the condition that is causing it. In the actual organic changes surgery as a rule is the only satisfactory means of cure, with the possible exception of ulcer, which shows a fair per cent of recovery by proper and rigid dietary, alkaline and rest treatment where this can be carried out properly. But if there is any treatment that will do more than palliate a chronic cholecystitis or appendicitis while under treatment, I have failed to find it. Both conditions are subject to remissions and exacerbations and remissions and we may sometimes think our patient is well when he is only in a stage of remission. Correction of faulty habits, and proper diet will cure a large number of our patients that do not have surgical conditions. The treatment of the remainder will have to be directed to the conditions underlying them. The drugs that are useful in the treatment of indigestion are very few in number and the list does not include pepsin. The prescribing of an "indigestion mixture" containing pepsin is a frank admission of our inability to locate and remove the cause of the trouble.

In conclusion, let us emphasize the following points:

1. Indigestion is purely a symptom and not a disease.
2. It is a symptom which taxes the art of history taking to the utmost. The history should be followed by an exhaustive physical examination.
3. It is a symptom that calls for certain routine laboratory and x-ray studies. These findings should be interpreted intelligently in connection with the history and physical examination. No possible cause of trouble should be left unexplored.
4. The treatment is that of the condition causing the symptom. Drugs play a very small part.

## BLOOD CHEMISTRY\*

JOSEPH J. WALLER, M.D., OLIVER SPRINGS, TENN.

ALL scientific truths are dug out of the dark mountain of hidden lore, and when first revealed are thrown into the crucible of experimental test. They must necessarily go by the way of Golgotha to determine whether they survive or perish.

Like the Greeks of old, those ever yawning for something new are too ready to seize everything on first appearance and shout "Eureka!" while others are slow and hard to convince that there are yet great truths ahead undiscovered for the benefit of man. We receive things in three degrees—sneering, hearing and cheering. Things that seem strange and unreasonable, especially if they savor of the miraculous, are at first sneered at, later as they get some recognition are permitted a hearing, and finally when they are established receive a cheering. St. Paul said "prove all things, hold fast to that which is good."

Out of so much chaff there are some grains of wheat worthy of the therapeutic test, and it is up to us to be on the alert to discern what is good and true before we jeopardize the life of any human being in reckless experimenting under the guise of scientific work.

Blood chemistry has come as one of the latest advances in diagnosis and offered its valuable assistance to the medical man. Is it a fad? Is it a fake? Is it worth while? I say a thousand times "Yes," it is one of the grandest boons to the profession, be he internist, surgeon or specialist. Through and by it in many cases we are enabled to solve the puzzle and strip the mystery of its perplexity and estimate bearings clearly and accurately. Dr. McElroy, of Memphis, told me the physicians of Memphis are using it, and he did not

see how they ever got along without it heretofore.

Some doctors have looked askance at it, and that class incompetent to see or discern any good that might come out of Nazareth have turned their bolts loose and sarcastically shouted "*Abrams!*" Some have prematurely and ignorantly condemned the utility of blood chemistry; later they have quietly stolen back into the light of its glare and admit its merits. In the heat of passion they seize the old rip saw and say:

"I do not like you, Dr. Fell,

The reason why I cannot tell;

But this I know and know full well,

I do not like you, Dr. Fell."

Such premature and unjust criticism seems to be the go in politics and religion, but science should deal honestly and fairly with all questions of promising good.

If the excretion from the kidneys tells its story and has its value appraised; if the sputum, gastric juice, and cerebro-spinal fluid get a respectful hearing and are given full credit for the story they bring from their respective organs, why not the blood? Heretofore the cell-count, the differential cell-count, the hemoglobin, etc., have given us a feint introduction to what the blood has in store for us. It traverses all the vessels in our body; it courses through all the organs, and dashes against all the tissues of our economy. It carries food to all the tissues to build and repair the metabolic loss; it carries away all the torn-down waste and effete material and dumps it out at the various emunctories of our body. It is the life, and in it dwells the whole story of our being. Tell me we should not dip into this stream and interpret its findings? It is loaded with truth and evidence and speaks in clarion tones through blood chemistry. Its study is not the ciphering

\*Read before the East Tennessee Medical Association, Harriman, October 10, 1924.

out and interpreting the mysteries of hieroglyphics. Our Lab men are working it out, comparing its findings, and printing it in open books accessible to the profession. Many things about it are yet to be learned and added to what we now have, but enough is all ready for use to prove its merits and give it a very high and prominent place in diagnosis. Its findings often solve the mystery, cut the Gordian knot, and enable us to make definite diagnoses and take our bearings with unerring accuracy.

I hope you will sit up and take notice while I recite a few of its many practical uses.

Merely the finding of sugar in the urine no longer warrants us in diagnosing diabetes. Renal glycosuria or dietetic glycosuria can be revealed only by blood chemistry. After a severe injury or sickness sugar may appear in the urine for a while. Diabetes? No, not necessarily. Test the blood, repeatedly, if necessary. Give a test diet.

Case No. 1 came to my office late one Saturday evening; urine loaded with sugar, many other symptoms suspicious. I was somewhat alarmed for the man. A blood test next morning before he took food revealed absolutely no increase in the blood sugar; his urine was also free. It saved the day. But, let me sound a note of warning right here: All cases of glycosuria should put you on guard and make you ever regard your patient as a potential diabetic, and cause you to issue him prophylactic instructions along dietetic lines.

On the other hand, urine free from sugar does not exclude diabetes, especially if the sugar threshold of the kidney has been raised by some nephritis. Test the blood for both. It is the genuine permanent high blood sugar that clinches the diagnosis of diabetes.

Albumin in the urine no longer proves a Brightic. Give it consideration but test the blood for retention.

No one can scientifically and successfully guide a diabetic without blood chemistry. It is true that after the type of case is estimated and its tolerance is determined with

the relation of the glycosuria to the hyperglycosuria of hyperglycistia then the urine test will obviate the necessity of making blood tests so frequently.

In renal disease it is the first to give alarm. Retention of uric acid takes place early—possibly the first symptom. Does that prove Bright's? No, but it should cause us to look for other symptoms. Retained uric acid may mean gout or anaemia. If it is the ushering in of inchoate Bright's, then look for the retention of N. P. N. and later creatin. These latter are not retained except in Bright's.

Blood chemistry does not reveal so much the organic kidney trouble as it shows what the kidney is not doing—derelict function. A half kidney, if sound, may do the eliminative work of two kidneys. Function is what we want.

Uric acid is difficult to eliminate; hence, a slight disturbance in the kidney will hold it back.

Albuminuria may be static and not mean Bright's at all.

In your case of cardio-nephritis you are at sea without blood chemistry; you do not know the organs principally and primarily at fault. If the kidney tests show them innocent, then direct your treatment to the heart. Blood pressure may be up in both, also both may have albumin. If there is aedema with dyspnoea, do a  $\text{CO}_2$  on the blood plasma or blood serum with a Van Slyke and Cullen outfit. It will warn you of the nearness of acidosis, which is so often a dangerous element in many of our diabetics, nephritics and enteric cases. It helps you watch and guard all the danger avenues. Leaving the use of blood chemistry in the cases of diabetes and nephritis, let us turn to the field of dietetics.

Case No. 2. A boy of 13, poorly developed, underweight, asthmatic, coughed; had been operated for tonsils and adenoids in hopes of getting relief. Would not eat ordinary diet except with much sweetening. No sugar or albumin in the urine. Blood sugar 0.20 per cent. Gave no medicine. Cut out all sugars and candy, allowed only cane molasses; put boy on plain grub

—milk, butter, cornbread, biscuit, fruits, greens, meat, eggs and cereals. In two weeks cough and asthma much better, boy eating well. Improvement satisfactory; no medicines used.

Case No. 3. Boy similar to No. 2. Sugar and candy eater, poorly developed; all his nickels and brownies went for candy. Put him on similar diet to the one above. His blood sugar was also 0.20 per cent. In two weeks was eating with the balance of the herd and had gained one pound. The mothers should be taught better than to gorge their hopefuls with all sorts of candy and cake that will produce enlargement of the adenoid tissue, tonsils and adenoids, make catarrh that will reach the ears and cause deafness, rot the teeth and cause nervous troubles; and to the doctor who seeks to win his way among the kids with a stick of striped candy let his name be "Anathema."

Examinations should mean more than to look at the tongue and feel the pulse. Examine thoroughly and charge for it, set the case right on dietetic and hygienic lines, and you will not often hear of operations for tonsils and adenoids. So many such operations are a damnable farce and are done more for the \$50 or \$100 than for the good of the child. The operations alone do not often cure.

Sometimes a low blood sugar is found. Then lessen the proteins and increase the carbohydrates. Blood chemistry guides you, saves the kidneys, saves the pancreas; enables you to steer safely between Charybdis and Scylla.

Now some miscellaneous points:

In cases of general bad feeling with no visible or tangible symptoms you may make a hit in testing the amount of bilirubin in the blood serum. It appears there before you can detect it in the urine, sclera or skin. Do it with the colormeter according to the Alice Bernheim test. It is easy.

We are not expected to cure all cases, but we are expected to know what is the matter, what to write on the death certificate, and if the case is going to get well or die. The Friedlaender sedimentation test is so

simple and easy that we all can use it. It does not diagnose, but it is a blood test that is almost mathematically accurate in prognosis. Get you one and try it.

All obscure and stubborn skin troubles demand blood chemistry to, if possible, discern the offending cause.

So many cases of neuralgia and neuritis are associated with hyperglycistia, and hyperglycemia that a blood sugar is in order.

All cases of early decay of the teeth, pyorrhea and gingivitis should have a blood sugar test.

Amblyopia without any apparent cause should have a blood-sugar test to see if it is a symptom in high blood sugar. All cases of dizziness and roaring in the ears demand these blood tests.

Of the many causes of headache, do not ignore blood chemistry.

In all cases of dyspnea test the blood and especially for the alkaline retention of the blood plasma by the Van Slyke test.

Is all this practical? Is it worth while? Can I learn it? Can I afford it? Have I the time? A thousand times "Yes."

It is an unerring guide in many cases of medicine, surgery and the specialties. All important surgical risks should have kidney function tests so there will not be so many post-operative deaths from "acute suppression of urine." You should make these tests before you send them in and recommend the operation. The general practitioner can and should do it. Any one with common sense and dexterity can learn it if he can boil urine in a tube and count percentage. The office girl soon learns and delights in it. The Van Slyke instrument is fine, even in a kid's toy shop. It is pleasant and profitable to operate. Cost: Some folks pay more for fine cigars in one year than is necessary to buy all you need. Quit telling smutty yarns, talking nonsense, stay in your office, work and read, and you will have all the time you need to learn blood chemistry. Begin to do these things, realize the benefit of them, and you'll not have occasion to criticize the other fellow for doing what you are not competent to

## ECTOPIC PREGNANCY\*

ROBERT W. GRIZZARD, M.D., F.A.C.S., NASHVILLE.

**E**TRA uterine or ectopic pregnancy is of great interest to the internist and surgeon alike, for it endangers the life of the patient, at all stages and in whatever form it may assume, irrespective of whether it be cornual, tubal, ovarian or abdominal. The tubal type is by far the most common, and will be dealt with to a large degree in this paper. The tubes are affected with almost equal relative frequency. In a small series of five cases observed in the past several months, there were three in the right tube and two in the left.

Until Lawson Tate in 1883 performed the first operation for ruptured tubal pregnancy with internal hemorrhage, this condition was almost reckoned as a pathological curiosity, except in its latter stages, when the symptoms became evident, or the fetus could not be overlooked.

Cases of pelvic hematocoele reported cured at that time by rest compare favorably with reports of tubal abortion of today.

*Frequency.* Statistics regarding this entity show constantly increasing frequency during the past two decades. The theories advanced for this increase are: 1. More accuracy in diagnosis. 2. Increased pelvic infections. Then, too, trauma and unnecessary intrauterine manipulations during labor are thought to play a part.

The ratio of ectopic gestation to a full time intrauterine pregnancy, according to Schumann, is 1 to 303. The most frequent age for development of ectopic gestation is the decade between twenty-four and thirty-three, and as most American girls marry in their early twenties, it follows that the majority of these cases occur within the first ten years of married life. This fact

is significant, in view of the oft-repeated statement that extrauterine pregnancy occurs most commonly after a prolonged period of sterility, or at least unfruitfulness.

*Causes.* It is universally held that the cause must lie in some interference with the passage of the ovum from the fimbriated extremity of the tube to the uterine cavity. Such interference may result from:

2. Obstruction of the tubal lumen from without.

1. Obstruction of the tubal lumen from within.

3. Anomalies of the tubal lumen, accessory tubes, etc., into which the ovum falls.

4. Desidual reaction in the tubes.

5. The growth of a fertilized ovum outside the tube to such extent that, when the ovum does finally enter the tube its size precludes its transit through the lumen.

Mechanical obstruction of itself does not appeal to us so much as it once did, since intrauterine pregnancy has been reported to follow ligation of both tubes. It seems reasonable that such a ligation would produce as much obstruction as would be produced by pressure from neighboring neoplasms, or from kinks, angulations and constrictions, as a result of adhesions, from various pathological conditions adjacent to the adnexa.

From a careful survey of the literature we are forced to conclude that the usual cause is pathological changes in the tubal mucosa, which interferes with the passage of the fecundated ovum during its tubal journey, and that such changes are usually the end result of tubal inflammation, most frequently of gonorrheal origin; then, too, it may be a sequel to conservative gynecological operations, performed for the re-

\*Read before the Nashville Academy of Medicine, January 9, 1923.

lief of sterility, or to cure a train of symptoms dependent on peritubal adhesions.

Mandl, Peterson and others claim that it has been the factor in at least two-thirds of their cases. This, of course, does not refer to the graver forms of gonorrheal infection, for in such tubes pregnancy cannot occur, but to the milder types, producing the so-called catarrhal or follicular salpingitis, resulting in a great number of cul de sacs or pockets, for the lodgment of the ovum.

*Recurrent or Repeated Extrauterine Pregnancy.* The causes underlying tubal pregnancy are frequently identical in both tubes, and should one tube be removed for the relief of this condition, it is reasonable to suppose that the other tube may be similarly affected at some subsequent period. Indeed, this opinion is so definite that a number of gynecologists advocate the removal of the unaffected tube at the time of the operation for extrauterine pregnancy as a prophylactic measure against the recurrence of the disease. Again we find a small per cent of cases where an inflammatory reaction following the laparotomy has damaged the remaining tube, which previously was healthy. Repetition of the accident in the same tube, and not uncommonly in the other tube in the same individual, has been reported; an intrauterine and extrauterine gestation may co-exist; simultaneous, bilateral tubal pregnancy and unilateral twin pregnancy are occasionally found. From statistical comparison by various writers of repeated ectopic, as opposed to intrauterine pregnancy, it appears that about one woman in eight who has had one extrauterine pregnancy may expect another, whereas one-half the total number have the possibility of a future normal pregnancy.

#### TERMINATION OF ECTOPIC PREGNANCY.

Tubal pregnancy may terminate primarily in:

1. Early death of the ovum with complete resorption and restoration of the tube to its pre-pregnant condition.

2. Death of the embryo with the formation of tubal mole.

3. Tubal abortion.

4. Rupture of the pregnant tube, either into the peritoneal cavity or between the folds of the broad ligament.

5. The growth and development of the embryo may proceed in term, when either the fetus dies as a result of nutritional failure, or is delivered by abdominal section.

6. If pregnancy be interstitial, the fetus may gradually be extruded into the uterine cavity, the placenta remaining attached to the cornual wall, and the pregnancy may terminate by spontaneous vaginal delivery, as in normal intrauterine gestation.

Ovarian pregnancy may terminate primarily in:

1. Rupture into the peritoneal cavity with hemorrhage and death of the fetus.

2. Rupture of the sac with secondary ovario-abdominal pregnancy; the placenta remaining attached to the ovarian parenchyma.

3. Rupture with secondary attachment of ovum. Abdominal pregnancy secondary to primary ovarian gestation.

In my five cases there were two tubal abortions, and three tubal ruptures, two into the peritoneal cavity, and one between the folds of the broad ligament. This latter variety of rupture is rarely attended by severe hemorrhage, and from the clinical standpoint is to be regarded as by far the most favorable type with regard to welfare of the patient. The most favorable termination by the intra-peritoneal route is, first, a rupture into the lumen of the tube, then by *the vis a tergo* of the hemorrhage, the ovum is expelled through the fimbriated extremity. This form of termination is known as tubal abortion.

The most dangerous termination of ectopic pregnancy is the rupture of the tube into the free peritoneal cavity, resulting in profuse hemorrhage. The severity of the hemorrhage varies with the location of the rupture, the nearer the uterus the more fatal the hemorrhage, is the rule; so noticeable has this been that the end proximal to the uterus has been termed the "Under-taker's End" of the tube, and the middle

and distal third the "Surgeon's Portion" of the tube.

Vaginal examination has resulted in the rupture of an ectopic pregnancy, and this may be emphasized in order to avoid the error of vigorous bimanual examination in suspected cases. Coition has also been recorded as causing such an accident. Other trauma, as lifting, straining at stool, etc., may be responsible for rupture.

*The Fate of the Embryo in Ectopic Pregnancy.* In a large majority of the cases of extrauterine gestation the embryo is destroyed during the early weeks of development. According to Mall, "In normal implantations in the tube most of the ova are destroyed in the early stages by the hemorrhage which is produced for their nourishment."

Rupture, when it occurs on the free side of the tube, throws the embryo into the peritoneal cavity and usually terminates its career. Broad ligament rupture offers the most hopeful outlook for the continuance of embryonic life. In the specimens studied by Mall, far more tubes ruptured when they contained normal embryos than among those in which the embryo was pathological; showing that a live, normal, tubal embryo is probably far more dangerous to the mother than a pathological one.

*Pathology of Extrauterine Pregnancy.* The place of meeting of spermatozoon and ovum, long the subject of spirited debate, has been definitely learned to be normally situated in the tube during the passage of the ovum through the canal toward the uterine cavity. It has been shown, by inflammatory changes in the tubal mucosa, by the presence of congenital diverticula, and by convolution or by constriction from internal pressure, the transfit of the fecundated ovum may be impeded, and its implantation into that portion of the tubal wall, where the arrest of its progress takes place, naturally follows.

With regard to the details of this mechanism, Bandler Well says that with the exception of the absence of the decidual and an enveloping zone composed of compacta the processes of implantation and of

gestation in the tube are the same as those in the uterus, modified only, as would naturally be expected, by the absence of the decidua and the thinness of the tubal wall.

The gestation sac is elsewhere bounded by a layer of tissue composed of trophoblast cells and masses of fibrin and by an envelope of tubal tissue. The syncytial cells digest a small area of mucosa, pass into the submucosa, and insinuate themselves between muscle bundles in a more or less concentric manner. The absence of decidual tissue which is in some way a chemical barrier to the invasion of the uterus, is the explanation of the rapid progress of chorionic villi toward the serous surface of the tube.

Maternal structures undergo fibrinous degeneration as a result of the unopposed ferments from the trophoblasts. Blood vessels are invaded, and the trophoblast cells become the limiting wall of the venous spaces. There is not enough supporting tissue, so hemorrhage is frequent. The rupture of the gestation sac may be due to the erosion of the serous coat of the tube, or to the sudden distention of the tube as a result of hemorrhage into it.

Whether a given case will result in a tubal abortion or tubal mole, depends upon the completeness with which the sac separates from its tubal attachment and the amount of hemorrhage, together with the degree of invasion of the musculature by the trophoblasts and its accordingly greater or less contractile power.

The gestation sac may rupture directly through the tube wall, either along its free edge or into the mesosalpinx between the folds of the broad ligament. Whether such extrauterine rupture takes place or not, depends upon the amount of erosion of the tube by the villi, and also upon the degree of degeneration of the muscle by pre-existing inflammatory process.

Von Winkel thinks that fully one-half the fetuses in ectopic pregnancy are deformed, the most common deformation being defects of the hands and feet. He collected eighty-seven cases, and found that in fifty-seven of them the fetuses were much de-

formed and twelve were markedly monstrous; as hydrocephalus, encephalosele, hydromeningocele, spina bifida, and hypospadia.

To summarize them: The fetus in ectopic pregnancy usually perishes before the third month. Rarely, it may develop normally to term and be delivered alive by abdominal section; or it may grow to full maturity, die after false labor, and be retained for a variable length of time as a foreign body undergoing generally some terminal changes in its structure, resulting in suppuration, lithopedion, etc.

*Changes in the Uterus.* The influence of an impregnated and imbedded ovum, wherever situated, always brings about an evolution of the uterus to some degree, together with the development of a decidua vera in that organ.

The uterus, while always enlarged in ectopic gestation, rarely reaches the same size as in intrauterine gestation, the stimulus being less pronounced. The increase in size of the uterus, according to Sampson, is due to two evident factors, hyperema and a thickening of the endometrium.

Uterine bleeding and the passage of decidua in the presence of extrauterine gestation, invariably predicates hemorrhage about the aberrant ovum and the termination of the ectopic pregnancy, and is literally an expression of sympathetic labor on the part of the uterus. So long as the embryo is living and development is in progress, according to Schumann, there is no uterine bleeding.

Following the bleeding there is usually expelled from this organ portions of its thickened endometrium, or the entire uterine decidua vera is separated *en masse* in the form of a decidua cast. Such casts are passed in nearly one-half of the recorded cases of tubal pregnancy which have been subjected to close study.

*Symptoms and Diagnosis.* The discussion of the symptomatology and diagnosis of ectopic gestation opens a large and somewhat confused subject, even to a trained observer.

The fact that pregnancy of some type

exists must first be established then whether it be intrauterine or extrauterine. Diagnostic signs must also be differentiated into those present before rupture or tubal abortion has taken place, those noted immediately after such rupture or tubal abortion, and those apparent in later cases.

Before rupture an occasional diagnosis is made. In all probability the diagnosis would be more frequent if these patients would consult a physician about their pain or discomfort, which as a rule varies a little from the character or discomfort they have been accustomed to for years; for practically all of these patients have been suffering from some pelvic disorder and quite a few have been subjected to pelvic surgery.

Ectopic pregnancy, before bleeding takes place in the peritoneal cavity, may be said to be a lesion incipient in all respects, presenting only the most illusive details upon which a diagnosis may be reached. Some authors describe the unruptured tube as having a velvety feel to touch.

Speaking broadly, the evidence upon which a correct conclusion may be based, after a slight bleeding has taken place are: first of all the history; second, the behavior of the menstrual flow; third, indefinite signs of a pregnancy; fourth, the presence of pelvic pain, even though this be slight in character; and lastly, the elicitation of the tender mass in one or the other adnexa upon vaginal examination, together with the presence of certain gestational alterations in the uterus itself. The history is by all odds the most important single feature in reaching a diagnosis.

The menstrual flow, according to Farrar's observation, was overdue in thirty-four percent, but it is the character of the menstrual discharge when present, rather than the amenorrhea, that is of most significance, differing from the normal menstrual flow in that the blood is darker and more viscid.

The diagnosis after a frank rupture is not usually so difficult, yet it should never be considered an easy one. If all the cases presented the same symptoms or the

well marked clinical symptoms laid down by most authorities we would not be misled so often. The symptoms we most frequently encounter with a frank rupture of the tube, with massive hemorrhage into the peritoneal cavity are sudden, violent pain in the hypogastrium, occurring in a sterile woman, associated with collapse and vomiting, cold sweat, subnormal temperature, rapid, weak pulse, tenderness over lower abdomen, more particularly over the ruptured tube, a bloody vaginal discharge at variance with her usual menstrual flow.

On vaginal examination we may find a lateral swelling with a marked tenderness on the affected side, or if hemorrhage is large we detect a vague sensation of a doughy fullness in the cul-de-sac, but if the hemorrhage is small and intraligamentous this fullness may not be so typical. Extreme tenderness is elicited upon bimanual examination and is a diagnostic point of value. There is usually an absence of abdominal rigidity during the first ten or twelve months.

In older cases the accumulation of large clots gives a sense of an irregular boggy fullness which may fill the entire pelvis. Rectal examination is very painful, and there is a marked discomfort on defecation. Fever usually comes on later, from a few hours to a day or two. A bluish discoloration about the umbilical region is occasionally found. X-ray may aid in diagnosing old cases.

The white cell count, a few hours after the hemorrhage, is fairly high, ranging from twenty to thirty thousand, usually. Taylor reports one case in his series with a leukocyte count of 46,000. The white cell count, in case of slight rupture or beginning tubal abortion, does not range nearly so high, rarely above 12,000.

In reviewing my series of cases, two of them presented alarming symptoms at time of rupture. Both were operated upon within twelve hours; the other three had lesser and recurrent hemorrhages, less severe symptoms, and their operations ranged from one week to ten days after the onset of symptoms. All of these made a perfect

recovery, and one has given birth to a normal baby since her ectopic pregnancy. None of them have had a repetition of their ectopic pregnancy.

Extrauterine pregnancy, after partial or complete rupture, must be differentiated from the following conditions:

1. Intrauterine pregnancy with threatened abortion.
2. Hemorrhage from the tube or ovary not in relation to pregnancy.
3. Acute salpingitis.
4. Acute appendicitis.
5. Ovarian cyst with twisted pedicles.
6. Rupture of gastric or duodenal ulcer.
7. Ureteral or renal colic.

The most common error is confusing an intrauterine pregnancy with threatened abortion, and ectopic pregnancy. It is surprising to note how large a number of patients have been subjected to curetage (eight per cent) in the belief that they are suffering from an intrauterine abortion. Again it is a fairly common occurrence for these women, believing themselves pregnant, to try to terminate the gestation by a self-induced or criminal abortion. About two per cent give such a history.

One of my cases gave such a history and she was curetted, but as the pathological report failed to show decidua, no light was thrown on the diagnosis. The vaginal bleeding continued, and a few days later she had a tubal abortion which necessitated a laparotomy.

Other common errors are mistaking tubal affection and ruptured appendicitis for an ectopic, and vice versa, but a careful vaginal examination and a searching history along with the constitutional findings, will most likely put us right.

Hemorrhage from the ovary or from the tube may occur, according to Schumann, entirely independent of the element of pregnancy, and the symptom complex, as well as the operative findings, may so closely simulate a ruptured ectopic gestation sac, that the correct conclusion can only be made by the aid of the microscope.

Moore, of Los Angeles, in April, 1922, *Annals of Surgery*, in a most interesting

article on intraabdominal hemorrhage from ruptured corpus luteum, reports two such cases, and reviews fourteen others collected from the literature. Intraabdominal hemorrhage following rupture of the corpus luteum in one of the fourteen tabulated cases terminated fatally. From the literature it seems to be of rare occurrence and seldom, if ever, diagnosed correctly before operation.

Wilson reports a case of a woman who died from shock on the eve of her marriage as the result of a profuse intraperitoneal hemorrhage from a ruptured corpus luteum.

Schumann reports a case from the bleeding of a tube in a spinster of thirty, who gave a history of a sharp attack of left-sided pelvic pain one year prior to admission to the hospital. Operation revealed a greatly distended left tube. The right tube and both ovaries were normal, the left tube was excised and microscopically showed no signs of the decidual formation, or chorionic villi, only an organized blood clot.

*The treatment* is essentially surgical, whether ruptured or unruptured. None of us are divided upon the indications; however, we do differ as to time of operation and the technique to be carried out in dealing with the existing conditions and pathology. It has been my practice to operate upon all these cases at the earliest possible time, provided, that in my judgment, the operation *per se* will not result in disaster. The technic of the operation itself does not give a great deal of concern, but the method of dealing with the pregnant tube, the remaining tube, as well as the ovaries, requires some thought, for this may decide the patient's future destiny.

The entire ectopic tube should always be removed, a sure way to avoid recurrence in the same tube. The treatment of the opposite tube must depend upon its associated pathology and the condition of the patient. It is my practice to leave one tube, unless its retention would seem to invite further pelvic pathology, to the detriment of the future health of the patient. The ovary on the affected side should be left when

possible, but when pathological it is removed with the ectopic mass.

As to management of free blood and clots in the abdominal cavity, this is a matter of individual choice; the larger clots can be scooped out with the hand, the residue of blood including smaller clots is either left behind or a more or less thorough sponging of the abdominal cavity may be practiced, always being mindful of the surgical axiom, "A minimum of operative trauma insures a maximum of success in treatment."

I am aware that a lot of good operators use normal salt solution in these abdomens, but personally I feel that just as good results can be obtained by its use, either under the skin or intravenously, immediately before or during the operation, or if an appropriate donor can be secured, and the case a desperate one, a blood transfusion or an autotransfusion, if you are reasonably sure there is no infection, are preferable to salt solution. It is unnecessary to use drainage for the remaining blood and clots in a clean case; but if infection is evident, drainage is indicated.

#### SUMMING UP.

1. The history is by all odds the most important single feature in reaching a diagnosis.

2. The most frequent casual agency is the end result of tubal inflammation of gonorrheal origin.

3. Relative sterility, especially of one child type, is a significant point.

4. One ectopic predisposed to another, or it may be more correct to say that the existing pathology predisposes.

5. The diagnosis before rupture is always difficult and rarely made.

6. Ectopic pregnancy endangers the life of the patient in whatever form it may assume.

7. Patients with ectopic pregnancy, with or without rupture, are always certain to have trouble, and should have an operation as soon as is consistent with good work.

8. The loss of blood may be through one rapid fatal hemorrhage, or there may be a series of lesser hemorrhages.

9. Since the immediate recovery of the patient is the first consideration, and as the patient is usually in a serious condition, no surgical procedure is performed, except the minimum required to combat the pathology present.

In conclusion, I most sincerely urge that you do not delay in getting these cases to the operating table, for it is not within the ken of human minds to foretell the result of an internal hemorrhage.

# THE JOURNAL

OF THE

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Devoted to the Interests of the Medical Profession of Tennessee

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|-----------------------|-------|------------------|
| J. F. GALLAGHER, M.D. | ----- | Editor           |
| R. C. DERIVAUX, M.D.  | ----- | Associate Editor |

NOVEMBER, 1924

## READ THIS PAPER.

In this issue of the JOURNAL will be found the presidential address of Dr. H. H. Shoulders, which was delivered before the recent meeting of the Middle Tennessee Medical Association. As will be seen from a perusal of the address, Dr. Shoulders has given much thought to the future of the medical profession of the state with a special reference to its economic status and its relation to legislation affecting it.

At the recent meeting of the Legislative Committee of the State Association, which was called by Dr. Shoulders as chairman to outline a definite line of policy to be pursued during the next session of the legislature, matters almost identical to those contained in the paper were discussed. The position taken by Dr. Shoulders was unanimously agreed to as being the correct one. Furthermore, the Middle Tennessee Medical Association unanimously endorsed Dr. Shoulders' stand. Every member of the state society should read this timely paper.

## OUR BOARD OF HEALTH.

Readers of the JOURNAL will have already doubtless learned of the resignation of Dr. C. B. Crittenden as Commissioner of Health and in charge of the Department of Public Health of the State of Tennessee. Dr. Crittenden leaves the service of the State to take charge of the public health activities and destinies of the city of Chattanooga. His record of duty efficiently performed is sufficient to justify deep regret at his leaving and to congratulate Chattanooga on his acquisition.

Dr. Crittenden's departure at this time is, however, unfortunate. The newly reorgan-

ized Department of Public Health has been functioning well under his direction and that of Dr. Bishop, his associate, and could doubtless so continue. But elaborate and complex extensions in the scope of the work of the Department of Health have been planned in accordance with recommendations made by Surgeon Carroll Fox, of the United States Public Health Service, and conforming with what has been insisted upon by the Chambers of Commerce and other civic organizations of Tennessee for purely economic considerations. These extensions contemplate an increase in the State appropriations for public health purposes from about \$77,000 to \$195,595; they are intended to further the development of full-time county health departments, increase the usefulness of the sanitary engineering service, and materially extend both the responsibilities and duties of the organization in other ways. It is incidentally intended to raise Tennessee from the bottommost place among the Southern states with reference to per capita appropriations for protection of the public health.

It is to be earnestly hoped that in filling the place left vacant by Dr. Crittenden's resignation, the Governor will appoint a trained and experienced successor in whose hands the important functions of the State Department of Health might be confidently placed. Public health administration is today as clearly defined and well recognized a specialty of medicine as is gynecology or oto-laryngology, and it is not difficult to visualize the end-results should by chance this appointment fall to some untrained and inexperienced individual, as might easily occur if political considerations were alone regarded in the selection.

## DEATHS

Dr. William F. Elliott died at his home in Nashville, October 26, age 65. Dr. Elliott had been a paralytic for eleven years.

Dr. John F. Taylor, of Sharp's Chapel,

Union County, died in a Knoxville hospital October 23, age 51. Dr. Taylor was a brother of Congressman J. Will Taylor.

Dr. E. R. Hochstetter of Chattanooga died at his home on Missionary Ridge, November 4, age 74.

Dr. R. A. Grainger of Paris died suddenly of a heart attack on returning from a professional call. Dr. Grainger was 67 years of age. He was a graduate of Vanderbilt University, Medical Department, of the class of 1882, and was an active member of the Henry County Medical Society.

### NEWS NOTES AND COMMENT

The Newell & Newell Sanitarium of Chattanooga has been admitted to Class A by the American College of Surgeons.

The Knoxville General Hospital has recently been admitted to Class A by the American College of Surgeons.

Dr. H. S. Shoulders and Dr. E. E. Brown of Nashville announce their association with practice limited to Roentgenology and Dermatology.

Dr. Otis H. Beck, house physician of the Memphis General Hospital, was recently married to Miss Opal Miller. Miss Miller was employed in the laboratory of that institution.

Scholarships in the Oliver-Rea Foundation for graduate study in medicine are available at the New York Post-Graduate Medical School and Hospital. Inquiries should be addressed to the Dean, 301 East Twentieth Street, New York City.

At the recent meeting of the Middle Tennessee Medical Association, held at Lewisburg, Dr. J. C. Kelton of Lascassas was elected president; Dr. John M. Lee of Nashville, vice-president. Dr. Sam P. Bailey of Nashville was re-elected secretary-treasurer.

Dr. J. O. Woods of Elizabethton, vice-president for upper East Tennessee of the East Tennessee Medical Association, calls attention to an error which occurred in the October issue of the JOURNAL in regard to the next meeting place of that association. The spring meeting of the East Tennessee Medical Association will be held at Elizabethton and the fall meeting at Cleveland.

By a vote of more than three to one the citizens of Dayton, Tennessee, approved the issuance of \$30,000 of bonds for the construction and equipment of the Rena Clark Haggard Memorial Hospital at Dayton. Private subscriptions which were headed by Mrs. Haggard, will bring the total to \$80,000 for this project.

### MISCELLANEOUS

#### TWISTED COLONS AND INVERTED COMMAS.

By Volvulus.

#### A STUDY IN PRINTER'S INK.

(Reprinted from Colorado Medicine, Oct., 1924)

*Symptomatology.* The symptoms of this painful disease consist principally of attacks of abdominal colic of sudden onset. The syndrome may be encountered daily in any editorial office—Sundays and holidays included.

*Etiology.* The cause of the disease can be unerringly traced to noxious material carelessly left in manuscripts by heedless authors. Such material is usually found in the following forms:

1. Ill-prepared copy marked "Dictated, but not read." (This noxious material frequently induces emesis.)
2. Sketchy notes used for a spoken address and not rewritten in manuscript form. (Emesis is often projectile in type.)
3. Twenty-page articles containing two pages of information. (Dyspnea and cyanosis.)
4. Crude abbreviations: Soda-bicarb, the Dr., P.S.P. test, R kidney, L.K., Sec'y., Ass'n, &c., etc. (Vertigo and diplopia.)
5. Common names in capitals: Measles,

Breakfast, Digitalis. (Opisthotonus and nystagmus.)

6. Profuse underlining, calling for italics, "black caps" and loud speakers. (Aphonia and laryngismus.)

7. Footnotes that should appear in the body of the manuscript. (Perspiration, chills.)

8. Left-handed spelling: Rockafellow Institute, exema, volumn, illio-cecal, posteriorally, etc. (Tracheal edema.)

9. Illustrations not furnished with titles. (Petit mal.)

10. Single-spaced typewriting, which precludes correction of any of the aforementioned errors. (Visceroptosis and grand mal.)

*Treatment.* The treatment of this grave and painful condition is chiefly prophylactic. There is need of more careful and considerate authorship. Fatal cases of this type of poisoning would occur less frequently if authors would seek and remove noxious material before releasing their manuscript for public consumption.

In connection with such prophylaxis, a few "Suggestions to Authors" suggest themselves:

a. Send in your top copy; not a smeary carbon.

b. Write on whole sheets, not half-sheets of paper.

c. Write your name on every page.

d. Furnish a title for each illustration, but do not write it across the face of the picture.

e. Make your references clear. Do not quote "Dr. Smith," but quote "Dr. Iota Magnus Smith." In giving references, do not conclude them with a penciled question mark. Do a little more work on the job.

f. In submitting a manuscript based on a paper read at a meeting, state in a footnote where and when the address was given. Thus—

Read at the Annual Meeting of the Colorado State Medical Society, October 7, 8, 9, 1924.

The footnote should appear at the bottom of the first page of the manuscript.

g. Conclude all manuscripts with a brief summary.

h. Do not plan to make the final draft of your paper on the printer's proof. Use the proof only to show printer's errors.

i. Prepare bibliographies and references with care.

Give the author's initials or Christian name as well as his surname. Follow with a colon (:) and then with the name of the book or article.

In the case of a book, give the edition, unless the edition referred to is the first, then give the page referred to. Follow with the place and year of publication, and the name of the publisher.

In the case of an article, follow the title with the name of the journal. If abbreviations are employed, use those approved by the American Medical Association. (See "Suggestions to Medical Authors and A. M. A. Style Book," supplied by the American Medical Association, 535 North Dearborn Street, Chicago, at a cost of twenty-five cents, or lent without charge by Colorado Medicine). Follow the name of the journal with the year of publication, and then with the volume and page number.

Follow the general form given below:

1. Lovett, Robert W.: The Treatment of Infantile Paralysis. Second edition, page 78. Philadelphia, 1917. P. Blakiston's Son & Co.

2. Timme, Walter: Lectures on Endocrinology, pp. 48-62. New York, 1924. Paul B. Hoeber, Inc.

3. Favill, John and Charles F. Rannick: A Case of Family Periodic Paralysis, Archives of Neurology and Psychiatry, 1924, vol. 11, p. 674.

4. Joslin, Elliott P.: Diabetic Problems of Today, Jour. Am. Med. Assn., 1924, vol. 83, p. 727.

#### CHLORIN INHALATIONS IN RESPIRATORY AFFECTIONS

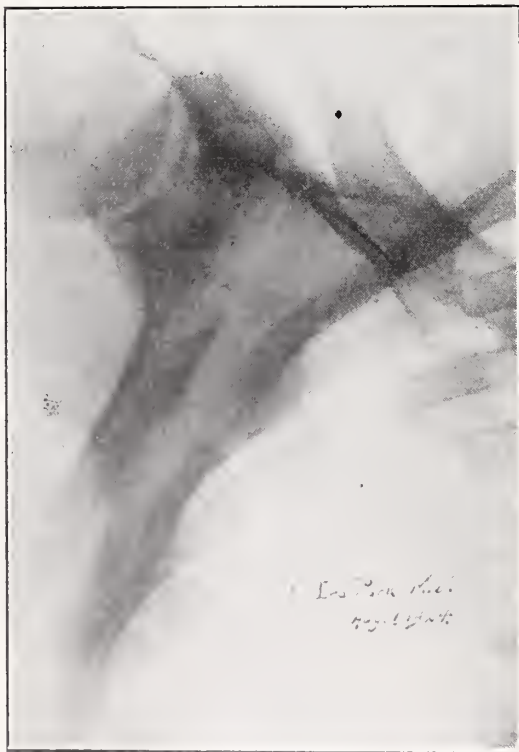
Numerous devices have been advanced for the inhalation of chlorin gas. Several municipal health departments have installed treatment chambers where such devices are

undergoing extensive experimentation. It is impossible to say if the virtues of the method has been demonstrated, and it must be considered in an experimental stage. The indications are that chlorin inhalations will not produce bacterial sterilization of the mucous membrane, although they seem to reduce the number of bacteria found on the tissues. The duration of an adequate treatment, the concentration of gas to be used, the methods by which the gas is to be produced, and similar factors are still the subject of experimentation. (Jour. A. M. A., August 30, 1924, p. 691.)

### FRACTURE OF THE NECK OF THE SCAPULA.

To the Editor:

J. G. B., colored, farm laborer, fell from a mower while trying to hold a runaway team. He was referred to me for a radiograph by a negro physician. The symptoms were those of a dislocated shoulder. The



enclosed print of the radiograph made shows a fracture of the neck of the scapula. I saw him six weeks later with perfect union and able to work. I am sending

this to you for publication, as it is rather an unusual fracture and of some interest to the profession.

IRA PARK, M.D.

P. O. Box 252, Union City, Tenn.

### SCARLET FEVER TOXIN

Scarlet fever toxin has been furnished by the John McCormick Institute to some city and state health departments. Physicians inquiring for this material should apply to their local health department. There is an increasing demand for standardized toxin that the Drs. Dick believe should be met. However, because the toxin must be standardized on human beings, the commercial companies are going to find it difficult to standardize accurately. (Jour. A. M. A., August 30, 1924, p. 705.)

## BOOKS RECEIVED

**DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS.** Third edition. By George W. Norris, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Henry M. Landis, M.D., Director of the Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania, with a chapter on the Electrocardiograph in Heart Disease, by Edward Krumbhaar, Ph.D., M.D., Director of Laboratories of the Philadelphia General Hospital. Third edition, revised. 907 pages, with 443 illustrations. Philadelphia and London. W. B. Saunders Company, 1924. Cloth. \$9.50 net.

The present edition of this already favorably known work represents a revision and an amplification of the previous issues which have won for themselves a noteworthy place among American medical texts. The book is an exhaustive treatise on physical diagnosis with especial reference to chest conditions, carefully arranged as to the sequential arrangement of its subject matter, and elaborately illustrated. It is probably of greatest value in post-graduate and clinical study and for use as a ready reference rather than as a teaching text for undergraduate work. A wider use of books of the character of Norris and Landis would go far in improving the average of the diagnostic work of the practitioner in general work and what might be gained in this respect in the case of pulmonary tuberculosis alone would more than justify the effort and energy involved. The book should meet the cordial reception that its merit and its authoritative position deserve. R. C. D.

DIABETES; Its Treatment by Insulin and Diet. A handbook for the patient. By Orlando H. Petty, B.S., A.M., M.D., F.A.C.P., Professor of the Diseases of Metabolism, Graduate School of Medicine, University of Pennsylvania; Graduate in Charge of Metabolism, Philadelphia General Hospital; Physician in Charge of Department of Diabetes, Memorial Hospital. Cloth. Price, \$1.50. With several illustrations. Pp. 111.

Philadelphia: F. A. Davis Company. 1924.

Dr. Petty has taken up other phases of diet than are usually found in a book of this type. He considers the vitamins the salt content and the base or acid-forming elements of the diet and gives diet tables. This book is written for diabetic patients, but it can be used to advantage by the physician that treats an occasional case of diabetes.

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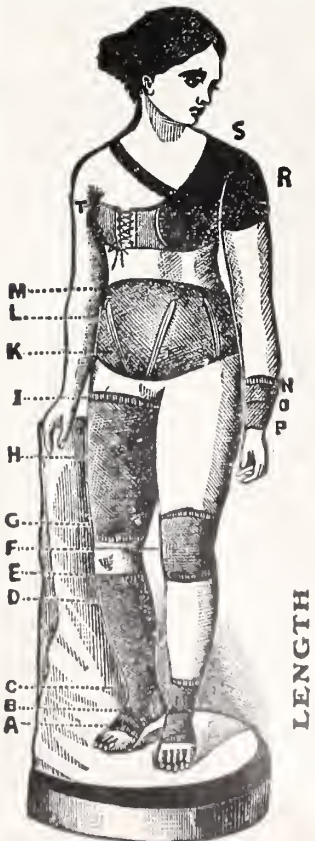
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## BORDERLINE CASES\*

HUBERT A. ROYSTER, M.D., F.A.C.S., Raleigh, N. C.

I COULD not, if I would, take the place of any urologist—much less the place of a very noted urologist from the city of New York. I am very happy, though, that you have heard from one of the real general surgeons of this country, a much better paper on urology than any urologist could have presented, and on the other hand—perhaps on the same hand—that you have listened to a keen analysis of the patient by an internist who is surpassed by none that I know of, so you will excuse me, Mr. President, if I take the middle ground.

As a surgeon, I am going to speak to you on borderline cases, in an effort to lie somewhere in the middle of the road between my two distinguished colleagues. I do this the more willingly because the longer I live the more I believe that one of the objects of the surgical art is to avoid surgery. I am going to take a text, and here it is, from Billroth: "The surgeon can only judge safely and correctly of the state of his patient when he is at the same time a physician. Moreover, the physician who refuses to treat surgical patients and to attend solely to the treatment of internal diseases must have some surgical knowledge or he will make the grossest blunders."

We have been accustomed to speak of certain cases as being on the borderline between medicine and surgery. The divergence must be in the way of treatment, because in the bright lexicon of diagnosis there is no such word as medical or surgical. As doctors we must meet on a common ground and exist for a common purpose. We must focus ourselves on the patient and ask ourselves not how we can divide him, but how we can best cure him. I feel constrained to say that it is not all of medicine to write a prescription nor to take the blood count; neither is it all of surgery to cut nor all of operating to get well.

I have divided all cases, at least the ones that I see, into three main classes: First, those that are frankly medical or at least cases which it is necessary and proper for the practitioner of medicine to treat. Second, those cases that are on the fence, in which both medicine and surgery are needed. Third, those cases that are obviously surgical, either at the beginning or at some time during their course.

1. Those cases that are considered to be in the province of the medical practitioner, whether he be an internist or one of that lost tribe who attends to the wants of men from door to door. I shall always feel that, whether or not they are lost in name, they are never lost in the capacity to cure people and to attend to their crying needs.

\*Special address delivered before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

They constitute the keystone of the medical arch. Without the general practitioner, of what use is the specialist? The truth is that the only real specialist left now is the general practitioner. (Applause.) So these diseases are his province: Pneumonia, typhoid fever (if there is any such disease now), influenza (we may stop calling everything that), meningitis, and so on. For these we are beginning to believe that outside of the relief of the patient's symptoms they must be combatted by serums or vaccines in some form, or some of the chemical substances which are now looming so large in medical practice.

Remember, however, that the complications of these conditions may be surgical at any time—not necessarily those things that are to be treated by the specialist, but complications that are entirely within the purview of the practitioner himself, but which must be looked upon with the mechanical eye. There are certain conditions with which every internist and every surgeon should be familiar, but which are more or less surgical, either manipulative or operative. There are certain manipulations which the practitioner should perform, but I object to calling it minor surgery. There is no such entity.

Some years ago I wrote to fifty surgeons and consulted all the textbooks on minor surgery that I could find. The definitions from the surgeons were all different as to what constituted minor surgery, and the chapters in the books considered everything from bandaging and applying a seton even up to gastroenterostomy and cholecystectomy. God save the mark! (Laughter.) Then I made a definition of minor surgery: Minor surgery is that branch of the art which is performed by the minor surgeon, and the more minor the surgeon is, the more major the operation will be before he is through with it. (Laughter and applause.) The real surgeon is content to divide it into departments. I really resent it because there is no other department of medicine which is so divided. Do you hear of minor neurology and major ophthalmology? Do we hear of minor

medicine and major medicine? Let us be just as kind to the surgeon. There are numbers of practitioners who feel that they can do a curettage, but would not know what to do if they should push the curet through the uterus. There are others who would cheerfully snip off hemorrhoids, but if they should happen to have a little hemorrhage higher up they would be embarrassed. They can do a paracentesis but would be at a loss how to resect a rib. It is a good rule not to start anything that you cannot finish.

There are certain things the general practitioners are called upon to do which are surgical and I know of no conditions that are treated so poorly. One is a sprained ankle. There is always somebody putting a sprained ankle to bed or putting a cast on it, and that is "minor surgery." The truth is that strapping should be employed and the patient turned loose to graze. Of course, should there be fractures around the joint, that is different; one of my friends said that the only good thing I ever said was that the time to take an x-ray picture is when you don't think you need it. (Laughter.) Fractured ribs and fractures at the elbow joint are, as a rule, improperly handled. When we learn that a properly applied corset in the shape of adhesive strips is all that we need use in a case of fractured ribs, and that an actually flexed position in a fractured elbow joint with early and frequent motion afterward, sometimes without any splint, is the best method—when we get to that point we shall have all of our minor surgical cases turning up without complications. The treatment of abscesses, scalp wounds, surgical emergencies and such things seems to be occasionally a very small affair, but we have seen a great fire kindled from the disturbances arising from these little things inadequately handled.

There should be a tremendous field for the medical man, the man with the medical mind, in the after-treatment of the surgeon's operations. I sometimes think that most of the best operators are not the best therapists when it comes to hand-

ling their patients afterward. I always have around with me my best prepared internist, not for the cases that are doing poorly but for those that are doing very well—to keep them from doing poorly. He knows something about stimulation, or the avoidance of it, that I do not know and he will carry the patient along with that insight into his personality that we are not always fitted to give. There is need for the medical man for that particular purpose.

There are certain types of cases in our second class, which I have designated as those on the fence, to which it might be well to refer. Those are the ones in which both the physician and surgeon are needed in the closest association. Both of us should get out of our minds our pet ideas of management of this type of case. I need refer only to a few to show you what I mean: The thyroid gland, the stomach and its related organs, gall-bladder infection, the prostate gland and abdominal ptosis. Obviously it would be impossible for me to discuss in detail any of these, but we may just consider in our own minds briefly what we would like to have done to ourselves if we had something the matter with one of those organs. The thyroid gland, the governor of the engine—it is shaped like one—is the enigma of the human body. When we say that all those cases should be submitted to surgery, or that none should be, or that the x-ray or medicine will cure them all, we are certainly far from the truth, but if we say that all of these agents or methods have their place in certain cases we are very near it. The recent revival of the administration of iodine in certain types of toxic goiter brings us back, some of us, to the time when it was considered very improper to put such patients on that treatment. I can remember thirty years ago when some of the older doctors were treating their patients in that way and a number of them got well. We have now come back to know that it has actually cured some types of this disease—which makes us realize that there is nothing new except what has been forgotten.

The stomach yells for the rest of the body, and it is well to remember that, if a patient has something that he complains of in the region of the stomach, it may not be in the stomach. A sickening sight, a foul smell, shocking news, may first be felt in the gastric region. There are only two real diseases of the stomach, cancer and ulcer, and those are so related to nearby and even to distant pathology that we should begin our search for stomach conditions somewhere else than in the stomach.

The diseases of the prostate gland are not always surgical. There are some cases that do not get to the surgeon and there are some that should get to him. We remove the prostate gland and sometimes the patient does not get well and we must think of the things back of it all. Those are the things that will sometimes kill the patient even without removal of the gland. Remember that those conditions are to be taken thought of by the surgeon as well as by the physician.

All the cases of abdominal ptosis are certainly on the borderline—they are amorphous. Whenever I see a surgeon do a hammock operation I wonder if the patient had not better be put in a big hammock on the porch rather than have several hammocks hung inside of her. (Laughter.) The visceroptosis is a part of a general derangement, or loss of nerve tone, or deficiency in fat, and whenever these things themselves are corrected we probably will not worry over the ptosis. We see so much of this condition in neurotic patients that we have a right to ask sometimes whether the ptosis causes the neurosis or whether the fact that the patient is neurotic is behind the whole affair. We see this condition in patients with a long waist, drooping shoulders, slanting abdomen, and invariably, so far as I have seen, they are of the neurotic type, either the still, the excited or the depressed variety. At any rate, if we should have this affair ourselves, we might prefer to lift the foot of the bed and sleep that way for several months, take an alkaline bitter tonic and apply a proper abdominal support, drink buttermilk and some oily

material, rather than submit to multiple hammock operations.

The last class, those that are frankly surgical in the beginning or at some time during their course, includes appendicitis, gall-stones, intestinal obstruction, hernia and tumors, both benign and malignant. I think we all might safely agree that these represent the common illustrations of those things which are purely, and perhaps only, remediable by surgical means.

The only comment I shall make upon appendicitis is that the most difficult diagnosis I have to make is that of chronic appendicitis, and I have sometimes wondered whether we have such a thing under that name and classification. I am frank to say that I shrink from operating for chronic appendicitis unless I can prove that at some time the patient has had a definite attack, watched and supervised by a competent physician. Even then I might have my doubts. The only thing we can be sure of is to practice the art of exclusion and then, after removing every possible cause for the symptoms, perhaps be persuaded that the appendix might possibly be removed.

Gall-stones, purely an incident in gall-bladder infection, usually have to come out because they produce pain, and sometimes the gall-bladder should come out with them and sometimes it should be left in. I see visions of opening a discussion on that point (as applied by a surgical philosopher) but there is only one thing to say—"you can and you can't, you will and you won't, you'll be damned if you do, you'll be damned if you don't."

Intestinal obstruction was so well discussed this morning that I shall not attempt any remarks on it.

Hernia is always a surgical subject whether remedied by mechanical or operative means. I feel sure that every surgeon here agrees with me that it is not traumatic in its original cause, that every case would

be better operated upon early in life to prevent all the possible dangerous sequelae that may come with age, and that our results usually are good. I do not grant that even a strangulated hernia is always a surgical procedure, because I have heard of one case that got well in spite of it. In that instance, related by one of America's foremost surgeons in his early days, the patient refused operation. Finally, the gangrenous gut ruptured, discharged its contents through a skin opening, dropped back and completed a Mikulicz operation upon itself. This has kept me from telling any patient that "if you are not operated upon you will not get well."

The breast may be taken as an example in which both malignant and benign tumors occur, and we may thank the propaganda recently started for the large number of benign cases we are now getting in spite of the prevalence of the well advanced malignant ones. I think there is only one thing to say and that is that every lump in the breast should be removed, and that everything in the borderland of "possibly malignant" should have a radical operation performed on it, coupled with everything else we can do for the patient.

Finally, let me leave with you two aphorisms, both by surgeons. One expresses the need of the surgeon himself, the other the privilege of the medical mind. First, John Ashhurst: "The importance, and even necessity, of a thorough knowledge of practical anatomy can indeed be scarcely overrated; yet it is more essential for the surgeon to be well versed in pathology and therapeutics (or, in other words, to be an accomplished physician) than it is for him to know the attachment of every muscle in the body, or all the possible variations of arterial distribution." Second, Theodor Kocher: "It is not always necessary for the practitioner to act surgically, but it is imperative that he should learn to think surgically."

## CONDITIONS GOVERNING THE ADVISABILITY OF PROSTATECTOMY\*

THOMAS D. MOORE, M.D., M.S. IN UROLOGY, Memphis

EARLY in the development of surgery of the prostate the operation was considered a formidable one. The mortality rate ranged from fifteen to forty per cent in general hospital practice. Undoubtedly the lowering of this rate in recent years has been a notable urologic achievement, and the operation is now regarded as a comparatively safe procedure. In the hands of competent surgeons, who are familiar with the great importance of proper pre-operative care, the mortality rate has been reduced to three to five per cent. Since Goodfellow's original prostatectomy thirty years ago, experience has taught some valuable lessons, among which may be mentioned: (1) the importance of preparation of the patient, which may require from a few days to a year or more; (2) the desirability of some form of local or regional anaesthesia; (3) the necessity of accurate operative technic and hemostasis; (4) the value of proper post-operative care.

Surgeons generally have assumed that prostatectomy is indicated as soon as there is evidence of persistent residual urine. However, this alone is by no means a dependable guide. Any one of the following conditions may be present and render immediate prostatectomy inadvisable: (1) infection; (2) impaired renal function; (3) lithiasis; (4) diverticula; (5) neuropathic or cord bladder; (6) malignancy.

### INFECTION.

Residual urine in large amounts is almost invariably accompanied by infection, although occasionally a small amount of residual urine may be present without demonstrable infection. The bladder alone

may be infected, but not infrequently there is also an associated pyelonephritis. By drainage of the bladder, by treating the cystitis, and by forcing the intake of fluids and stimulating elimination, the renal infection usually improves, although it may persist in spite of such treatment and cause continued frequency of urination following prostatectomy. Severe pyelonephritis occasionally follows simple drainage of the bladder and causes death before it is possible to remove the prostate. In no case would a prostatectomy be justifiable in the presence of an acute urinary infection with constitutional symptoms. Sepsis is not an uncommon cause of death following operation and must be rigidly guarded against. The use of vaccines and urinary antiseptics has accomplished very little in combating such infection or in establishing immunity.

Following the institution of drainage of the bladder, especially by urethral catheter, a period of reaction is sometimes experienced, marked by rigors, fever, anorexia, and loss of weight and strength. If a patient can be prepared for operation by urethral catheter drainage, a primary suprapubic prostatectomy can be done with the manifold advantages of this procedure. However, after insertion of an in-dwelling catheter, if a reaction begins with its characteristic train of symptoms and deleterious effects on the renal function, it is advisable to perform at once a suprapubic cystostomy and remove the prostate secondarily when conditions are more favorable. Frequently such means, when promptly adopted, will bring a reaction to an abrupt termination. It is unquestionably a mistake to delay suprapubic drainage after a severe reaction has once begun. There is an almost irresistible temptation to delay the drainage operation in the hope

\*Read before the West Tennessee Medical and Surgical Association, Jackson, May 22-23, 1924.

that the reaction will subside within a few days and that by continued use of the urethral catheter the patient can be "saved" for primary prostatectomy. However, it frequently happens that delay permits the condition of the patient to become desperate and drainage, becoming imperative, is tardily performed and accomplishes nothing. Death may follow such a course and will be charged against the suprapubic drainage, or even against the operation of secondary prostatectomy, when as a matter of fact the burning desire to remove the gland as a primary prostatectomy is the responsible factor.

Experience has taught that a prostatectomy performed on a patient with a non-infected bladder is accomplished with greater risk than in cases with infection. This apparent paradox may be explained by the fact that it is practically impossible to prevent infection of the bladder following removal of the prostate, however careful the technic. Not having had an opportunity to develop some degree of immunity previous to the operation, and owing in part to the general lowering of resistance, which follows any major surgical procedure, the patient undergoes a severe reaction to which he may succumb. In dealing with this group of cases it has been found advisable to drain the bladder, either by urethral or suprapubic catheter, depending upon the exigencies of the case, and prepare the patient in a manner similar to those with infection, thereby establishing a certain degree of tolerance to vesical instrumentation and immunity to infection.

#### IMPAIRED RENAL FUNCTION.

It is generally recognized that the patient who is persistently carrying residual urine is a potential uremic and, as a rule, the greater the amount of residual urine the more marked the degree of renal insufficiency. In a given case the amount may vary considerably from time to time. The presence of residual urine causes serious interference with renal function and the longer the condition is allowed to exist the more slowly will be the return to normal.

An obstruction of brief duration may cause a marked degree of impairment of renal function, but fortunately this type usually responds promptly to proper therapeutic measures.

There are now available a number of renal functional tests, at least three of which may be considered practical. The most reliable are those dependent upon retention in the blood of substances in increased amounts which under normal conditions are present only in small quantities. For example, the blood urea when estimated after twelve hours of fasting, is probably the most accurate index of renal function. Excretory tests, such as the phenolsulphonephthalein output, constitute a valuable means of determining kidney function, but such tests are more susceptible to variations and technical errors and are consequently less reliable. However, in a given case the blood chemistry findings and the phenolsulphonephthalein output serve as a mutual check and have been found very dependable. The salivary urea index, as described recently by Hench and Aldrich, represents the most rapid, convenient, and practical renal functional test yet devised, although it is somewhat less accurate than estimations based on blood chemistry findings. By this test the mercury combining power of the saliva is determined, which has been found to be a fairly reliable index to the concentration of urea in the blood plasma. The test is surprisingly simple and can be done at a patient's bedside in two or three minutes time. The writer has found this method very useful and convenient in following the course of renal function in patients undergoing preparation for prostatectomy. At the beginning and end of such preparation the blood chemistry is also studied. As a general rule it has been found inadvisable to attempt the removal of the prostate with blood urea in excess of forty mgs. for each 100 cc., or with the phenolsulphonephthalein output less than thirty-five percent for two hours and fifteen minutes.

Equally important as the functional tests of the kidneys is the general health of the

patient as a criterion of the opportune time for operation. Although the laboratory tests may indicate normal renal function, if the appetite is poor, the general strength and weight below normal, and the patient complains of feeling poorly, it would be hazardous to attempt the removal of the prostate.

#### LITHIASIS.

Stone in the bladder is not uncommonly associated with hypertrophy of the prostate and residual urine. Freyer found stones present in 274 of 1550 patients (17.7 per cent) upon whom he performed prostatectomy. In the series of 1360 prostatectomies reported by Hunt, stone was present in 163 (twelve per cent). The average incidence of stone in these two large series is fifteen percent. The condition may occur with or without residual urine. Probably the best explanation of the condition is that suggested by Keyser, whose observations tend to show that there is some disturbance in the equilibrium of the normal urinary colloids and crystalloids, permitting the precipitation of crystals in coalescing forms, in contradistinction to the discrete forms normally seen. This physio-chemical disturbance is probably due to bacteria or to a diminution of the protective colloids, or to an excess of crystalloids.

In those instances of prostatic hypertrophy with co-existing stone it has been found best to remove the stone and institute suprapubic drainage at the same time. The accompanying infection will respond to treatment much more readily after the stone has been removed. At some later date the prostate may be attacked with much less risk to the patient. In the presence of stone a primary prostatectomy would be permissible only in those instances in which the stone is small, the bladder comparatively healthy, the renal function normal, and the general condition good.

#### DIVERTICULA.

Large surgical diverticula were present in five percent of the cases of prostatic hypertrophy with obstruction reported by Hunt. They presumably arise from areas of congenitally low resistance in the bladder

wall, usually near a ureteral orifice, which undergo dilatation in the presence of obstructive conditions. Rarely a diverticulum is found in a young person without any demonstrable obstruction; such may be considered truly congenital.

Diverticula may be suspected when foul urine or pyuria persist in spite of bladder irrigations. A low phenolsulphonephthalein output in a patient with normal blood chemistry findings may lead one to suspect a bladder diverticulum with retention of the dye in the sac, providing technical errors have been avoided in making the test. When suspected their presence may be determined by means of a cystogram; or cystoscopy and a lead catheter coiled in the sac may be used. A cystogram is more reliable and informative.

Due to the long standing obstruction, so common in these cases, large diverticula are often associated with marked renal insufficiency. In such instances it is best to perform a suprapubic drainage, introducing one catheter into the cavity of the diverticulum, and a second catheter into the bladder proper. After a period of lavage the infection subsides, the renal function improves, and the removal of the diverticulum may be attempted. If the sac is large and the operation technically difficult, it is advisable to insert a suprapubic catheter and attack the prostate later. Occasionally, when the kidney function has not been markedly impaired and the general condition is good, the preliminary drainage may be omitted. If the sac is small and its removal accomplished without incident, the prostate may also be removed at the same time. However, it is a good rule to reserve prostatectomy for a later time, even though the kidney function and general health are good.

#### NEUROPATHIC BLADDER.

The term *neuropathic* is used to designate those abnormal conditions of the bladder which are dependent on a disturbed nervous mechanism, either central or peripheral in origin. The term cord bladder is more commonly used, but should be reserved for those cases in which there is some causa-

tive lesion in the spinal cord or brain. It is not unusual to observe a patient with the typical findings of a cord bladder, but in whom there is no demonstrable lesion in the central nervous system by the usual methods of examination. In 1923, the writer suggested a means of accurately testing bladder sensation. A number of patients with normal and pathologic bladders were subjected to sensory tests, using tactile, thermal, and painful stimuli. It was found that sensibility for these stimuli was normally present in the bladder and urethra. It was interesting, however, to find the sensory responses in the bladder totally absent or markedly diminished in a series of patients with clinical evidence of cord bladder, but with negative neurologic findings. In view of these facts, the assumption seems warranted that a local or peripheral disturbance may exist in the nerve supply, which may involve either the motor or sensory fibers or both, rather than that the underlying cause is a lesion in the spinal cord or brain. Occasionally such patients will present a co-existing enlargement of the prostate and it may be difficult to ascertain the extent to which the enlarged gland is responsible for the urinary retention. In the differential diagnosis of these conditions, a careful examination of the central nervous system should be made, following which cystoscopy should be done which should include the testing of the bladder sensibility and musculature, before the prostate is condemned as the sole etiologic factor. A prostatectomy performed on a patient with a neuropathic bladder may not only be of little or no benefit, but may cause actual harm.

In long standing obstruction from enlarged prostate, urethral stricture, contracted bladder neck, or spastic internal vesical sphincter, the bladder may become overdistended and atonic. In such instances, although the intravesical tension may be low, which would indicate poor detrusor tonus, the response to sensory tests will be normal. Removal of the cause of obstruction will usually be followed by a return of

the normal capacity of the bladder and an improved tone of the musculature.

#### CYSTOSCOPY IN PROSTATISM.

Cystoscopic examination is a serious procedure in the aged and should not be done routinely in patients with hypertrophy of the prostate. A certain amount of traumatism of the urethra is unavoidable, however gentle the manipulation, and anuria, uremia, and death my result. Severe reactions are sometimes seen in such patients resulting from the mere introduction of a soft rubber catheter. Definite indications for cystoscopy in patients with prostatic enlargements are as follows: (1) in the absence of urethral stricture, when there is evidence of obstruction to the urinary flow, adm the rectal examination reveals no appreciable enlargement of the prostate; (2) when the symptoms suggest the possibility of associated pathology in the bladder or kidneys; (3) when the presence of a neuropathic bladder is suspected; (4) when the nature of the prostatic enlargement is not clear.

A cystogram should be made prior to prostatectomy in all instances, as it frequently yields information of importance in the intelligent handling of the case.

#### CHRONIC VESICAL DISTENTION.

From time to time patients are observed who complain of incontinence, which on examination is found to be the overflow from a chronically distended bladder. The sudden emptying of such a bladder may be followed by the rapid onset of uremia, due to the congestion of the urinary tract resulting from the sudden release of the pressure. Under such circumstances complete anuria and a fatal termination occasionally result. The problem of the chronically distended bladder has been very satisfactorily solved by the method of gradual decompression, first described in 1920 by Van Zwalenburg and subsequently elaborated by Foulds, Bumpus, and Young. After such a bladder has been completely emptied it is drained continually by urethral catheter or a suprapubic drainage may be done. In cases in which it is impossible to introduce

a urethral catheter, gradual decompression may be accomplished with a suprapubic catheter introduced by means of a trocar and cannula.

MALIGNANCY.

Carcinoma of the prostate occurs in approximately fifteen percent of the cases of enlargement of the gland producing troublesome symptoms. When the disease is advanced and extension beyond the capsule has occurred, it is futile to attempt the removal of the gland with the hope of eradicating the malignant process. Only those cases in which the carcinoma is well defined and limited to a small portion of the gland should be subjected to prostatectomy. Unfortunately metastases have already occurred in about thirty percent of the cases when a physician is first consulted. Obviously these are not amenable to any form of treatment. Between these

use of radium may yield splendid results, provided its application is made in such a way that all the malignant cells are reached. This is accomplished by means of specially constructed applicators for intraurethral and rectal exposures and also by the insertion of radium needles into the substance of the growth through the perineum. In the inoperable cases and those too far advanced for radium treatment, a palliative suprapubic cystostomy may be justifiable when obstruction is present and permits the patient to live in comparative comfort until the fatal issue.

Other indications for removal of the prostate are (1) chronic prostatitis, when associated with residual urine, (2) recurring abscesses, (3) prostatic calculi, and (4) carcinoma of the bladder, when the disease has encroached upon the prostate and necessitates prostatectomy in order

CASE I. COURSE OF RENAL FUNCTION.

| Date     | Salivary<br>Urea Index | Blood Area<br>MG. for Each 100 c.c. | Phenolsulphone-<br>Phthalein |
|----------|------------------------|-------------------------------------|------------------------------|
| 12- 9-22 | ---                    | 276                                 | ---                          |
| 12-11-22 | ---                    | 242                                 | ---                          |
| 12-13-22 | 192                    | 226                                 | ---                          |
| 12-14-22 | ---                    | ---                                 | No Return                    |
| 2-18-23  | 90                     | 100                                 | 10                           |
| 2-20-23  | 108                    | 112                                 | ---                          |
| 2-24-23  | 90                     | 96                                  | ---                          |
| 2-27-23  | 78                     | 80                                  | ---                          |
| 3- 2-23  | ---                    | ---                                 | 15                           |
| 3- 3-23  | 72                     | 64                                  | ---                          |
| 3- 7-23  | 66                     | 66                                  | ---                          |
| 3- 9-23  | 60                     | 56                                  | ---                          |
| 3-10-23  | 54                     | ---                                 | ---                          |
| 3-16-23  | 57                     | 52                                  | 15                           |
| 3-20-23  | 66                     | 60                                  | ---                          |
| 3-23-23  | 60                     | 62                                  | ---                          |
| 3-27-23  | 60                     | 68                                  | ---                          |
| 3-30-23  | 66                     | 60                                  | ---                          |

two extremes are the greater number of cases, which may be divided into two groups depending upon the degree to which the disease has advanced. (1) If the growth is widespread, extending far into the region of the seminal vesicles, and laterally into the pelvic tissues, although no metastases may be demonstrable clinically, very little benefit may be expected from any form of local treatment. The use of radium in such a case is worthless and brings discredit upon this valuable agent. (2) If the growth is limited to the gland, or has extended only slightly beyond the capsule, the

to completely circumvent the neoplasm in its resection. For lack of time these conditions will not be further discussed.

SUMMARY.

1. Due to increased knowledge and more intelligent handling of the condition in recent years, the removal of the prostate has become a comparatively safe procedure.
2. Active infection of the bladder and kidneys should receive appropriate treatment before prostatectomy is attempted.
3. The non-infected bladder with residual urine should receive the same treatment prior to the operation as one with infection.

4. The in-dwelling urethral catheter should be employed for drainage of the bladder whenever practicable; however, should its use initiate a severe reaction it should be removed at once and suprapubic drainage instituted.

5. Renal function and the general condition of the patient are the most dependable guides in determining the proper time for prostatectomy.

6. Stone in the bladder occurs in about fifteen per cent of cases of hypertrophy of the prostate requiring surgical relief. Following removal of the stone, the bladder should be drained for a time before the prostate is removed.

7. Large surgical diverticula are present in five percent of cases of prostatic enlargements giving troublesome symptoms. They should be resected and the prostate removed secondarily.

8. When the presence of a neuropathic bladder is suspected, in association with an enlarged prostate, the motor and sensory fibers of the nerve supply of the bladder should be tested before condemning the prostate as the sole cause of the urinary retention.

9. Cystoscopy should not be employed routinely in patients with prostatic hypertrophy, but should be reserved for those cases presenting symptoms or findings suggesting associated pathology of the bladder or kidneys, and instances in which the diagnosis is uncertain by the usual methods of examination.

10. Gradual decompression is an easy

and safe method of emptying the chronically distended bladder.

11. Carcinoma of the prostate occurs in about fifteen percent of cases of prostatic enlargement producing obstruction. In selected cases the use of radium is the treatment of choice. Surgical removal should be reserved for the early cases before extension beyond the capsule has occurred.

12. Chronic prostatitis, when associated with residual urine, recurring abscesses, prostatic calculi, and operable neoplasms of the bladder involving the prostate, are indications for prostatectomy.

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## CLEFT LIP AND PALATE\*

J. P. BAIRD, M. D., Dyersburg

THE expression "Cleft Lip" has, of late, almost entirely supplanted the old one of "Hare Lip," which the majority of present day workers in this line agree is a misnomer.

The name "Hare Lip," which was supposed to mean like the lip of a hare, was anatomically not the best expression, because the depression in the lip of a hare is in the median line; but practically all clefts in the lips occur on one or both sides of the median line of the upper lip.

An exceptional case of median line cleft of the upper lip and palate combined is reported by Brophy, the only case of this variety reported; while a very few cases of median lip cleft only have been reported.

Two reports of lower lip median clefts by Robinson and MacCormack comprise the only reports of this variety and are very rare and exceptional.

The expression "Cleft Lip" is more exact and really descriptive of the condition present, which is a congenital cleft; or ununited fissure due to failure of union of superior maxillary and premaxillary processes during foetal development.

These deformities occur frequently and are of the most conspicuous and abhorrent nature. We all see them often, however. I more fully realized the extent of those afflicted after seeing a quoted army department report of the number found among the drafted men examined during the late war. There were 1183 cases of cleft palate and 283 of cleft lip.

These found in young men represent only a small part of the total number when we consider the prevalence of cases found in infants and children. They are naturally more numerous during first year of age on account of the high mortality from malnutrition during this period.

The varieties or rather the extent, location, and degrees of clefts are extremely numerous. I have seen many of them and rarely two of exactly the same degree or location. We see the small notch in the vermilion border of the lip; deeper ones extending through part or all of the lip to the nasal cavity. Then deeper clefts appear extending through the gums, alveolar process, and maxillae; and the various deeper degrees extending through the hard and soft palate. Again, we find only the small notch or bifurcation of the uvula, and all degrees from the posterior soft palate cleft, forward through the hard palate, alveolar arch, and on to complete cleft lip.

Any degree above mentioned may appear on one or both sides and these comprise the great majority of cases, the median clefts before mentioned being exceedingly rare.

Complete double cleft palate and lip usually show the premaxillary bone extending forward sometimes beyond the tip of the nose, and attached anteriorly to it a short central portion of lip or pro-labium which is too short to form the central portion of the lip without lateral flaps connected properly beneath it. This anteriorly displaced tissue in this peculiar and extreme deformity should be preserved, properly denuded and placed back in position to complete the alveolar arch, and never excised, as is sometimes advised and practiced, for by so doing irreparable damage is done and the tissue destroyed cannot be replaced. This is the key to the anterior part of the alveolar arch and hard palate, contains two to four unerupted teeth, and is needed to prevent a permanent deformity.

Occasionally acquired cleft palate occurs from injury or syphilis; perforations are common from the latter and, of course, systemic treatment should precede attempted closure.

\*Read before the West Tennessee Medical and Surgical Association, Jackson, May 22-23, 1924.

Very rarely an extreme cleft extends from one or both lips upward through the cheek and eye.

A few words regarding the probable cause may be of interest to those studying the subject. However, as far as I can see from a study of several reasons advanced to support certain theories, they are principally speculative and really of no practical importance.

Amniotic adhesions have been suggested as preventing the cleft closure. Also, maternal impressions are thought by the laity to be a certain cause. Heredity undoubtedly plays a part, yet difficult to explain, but

order of closure, is pressed upward, together with the enlarged tongue, in early foetal life into the widened superior maxillary cleft, and acts as a wedge to interfere with complete closure.

We can easily understand that this could be produced by the flexed position of the chin on the chest in utero, pressing upward between parts so easily influenced in early foetal life.

On examination of a complete cleft lip and palate case in the first few weeks of life, the chin can be forced upward between the wider maxillary bones which can

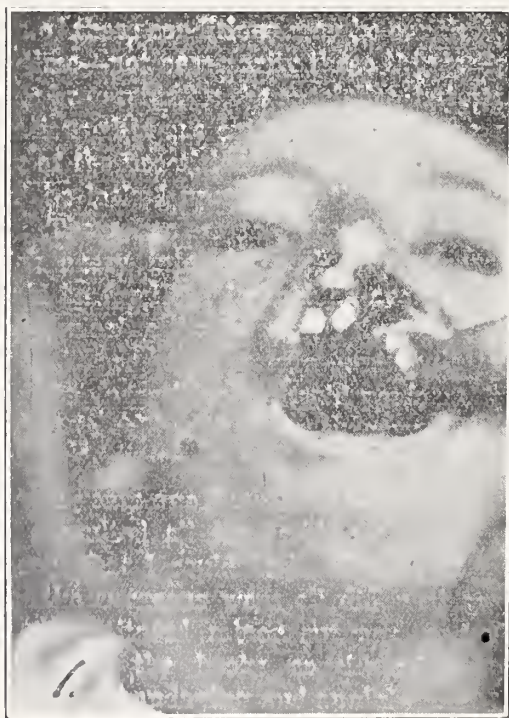


Figure 1



Figure 2

the number of families with several like deformities which we have all observed, is good evidence of hereditary influence. One or both of twins are sometimes affected, and occasionally the affected child is the strongest and most robust of the two, which is hard to reconcile to the theory advanced that malnutrition is a cause.

A seemingly plausible explanation is made, and is sound from a mechanical and anatomical standpoint, that the lower maxilla being the first to unite in the normal

be observed to spring outward. I have, during the last few days, observed this phenomenon in a seven weeks old infant who is at present being prepared for operation.

In studying this relative position as a cause, it also suggests the proper time for beginning treatment of this condition to be at an early date, while the separated maxillae are quite flexible and amenable to reposition without making fracture of the bone necessary.

Before taking up a few of the points

necessary in treatment and the best time for such, I think it very practical to consider what advice we, as surgeons, should give to patients; and also to physicians who are called, as a rule, first for advice on this frequent deformity.

I should hesitate to suggest that a considerable number of doctors are perhaps unqualified to advise proper treatment, were I not borne out by the statement of operators of larger experience that teaching in this line is sadly deficient in many medical colleges.

That may explain the fact that we fre-

was impossible to make correction. Also, I have seen cases of partially corrected lip with no attempt to operate on the palate, who had been told by a surgeon of fair reputation that the palate needed no correction.

My conclusion may be wrong, but I always suspect that the attempted repair was done in these cases in that manner because the surgeon thought he could get by with a repair on the lip and didn't have the nerve to attempt the harder job on the palate.

Then we see the patients who have experienced failures at operation, and others

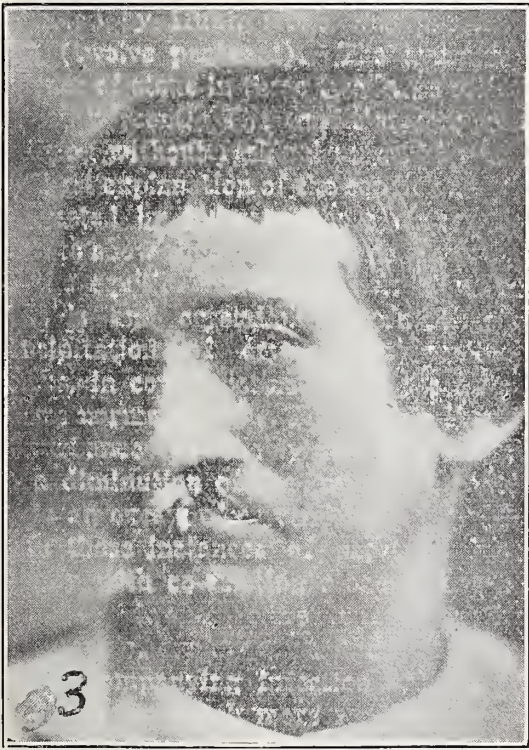


Figure 3

quently find cases previously advised by physicians to "make no attempt to have the deformity corrected," or "to have the lip operated only," or to have the lip operated first and palate later," or to "wait until the child is stronger or older and able to decide for himself whether or not he wishes the operation." All of which is incorrect, foolish and damaging advice.

I have seen and corrected several cases of moderate severity who had been told it

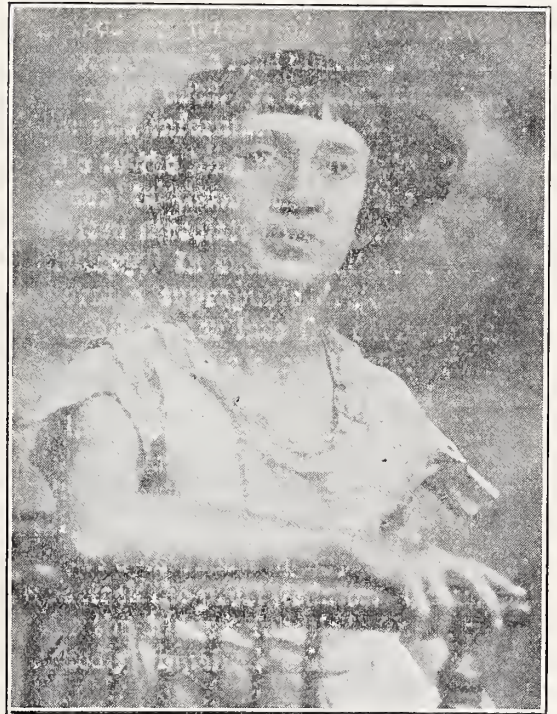


Figure 4

who are afraid by seeing these failures; and still others who in their extreme ignorance solemnly believe that God Almighty created their child with this affliction, and they will not have anyone attempt to change His work.

To correct the above erroneous ideas of physicians and patients is the most important and practical point, I believe, in the discussion of this subject. More so than the cause, pathology, or detailed technique in operating should be the understanding

that these deformities can be, in all cases, improved or completely corrected, and should be done in very early infancy. Adults can be improved but every case in the adult is a neglected case and could have been done more perfectly during infancy.

There are two exceptionally good reasons for the early operation on the palate; the flexibility of the soft cartilaginous maxilla, and the fact that articulation has not been faultily established. Any one who has operated on a few cases during the first six months can see the advantage of operating while the maxillary bones are soft and capable of being sprung together and held by

same effect posteriorly. This leaves the superior alveolar border out of alignment with the lower, which never can be perfectly corrected. The lip closure first also limits to a degree the room much needed during the hard palate repair.

On first examination of a wide cleft, apparently there is a great lack of tissue causing the cleft, but Keith, Brophy, and others have called attention to the fact that in almost all cases sufficient tissue is present, if brought together and reshaped, to almost

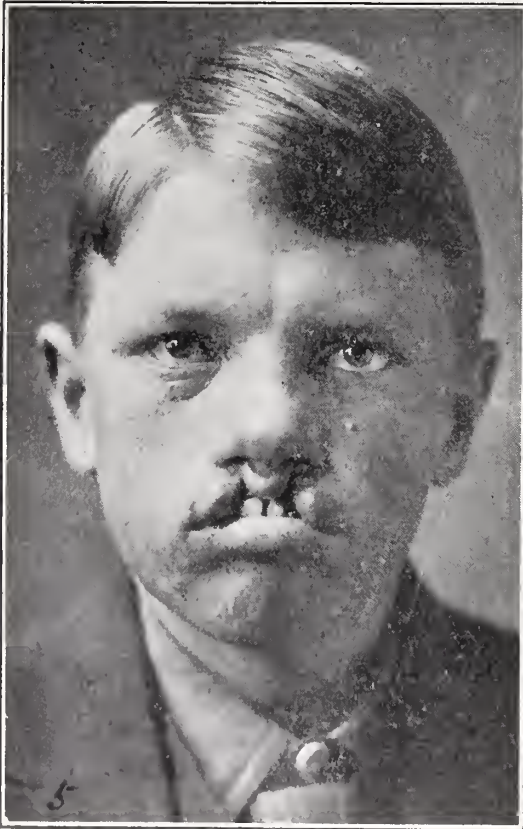


Figure 5

small wires passed through lead strips or plates.

The lip should not be operated first during early childhood for the reason that even the small amount of constant pressure or tension produced by the closed lip on the anterior part of cleft produces some closure of the anterior part without causing the

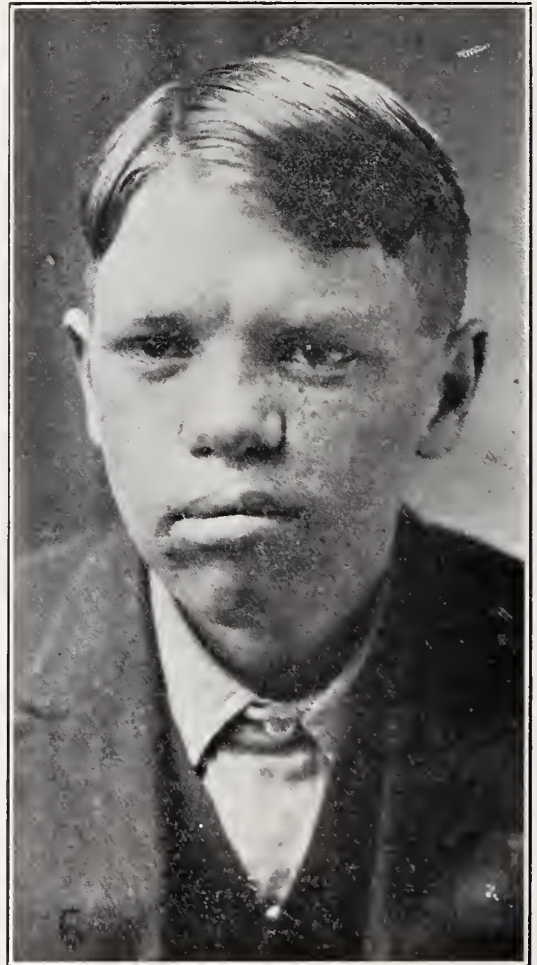


Figure 6

perfectly close the opening and bring the upper jaw back to the same width and proper relationship to the lower. This should be the first step and preferably done during the first three months.

We should only attempt to get union of the alveolar arch and hard palate at the first

operation, as the complete closure of the soft palate at this time prolongs the operation to the point of great risk, and probably also would result in failure to get union of the posterior portion. A few months later the lip may be safely closed, and after another few months rest and preparation of the patient, the soft palate should be completely closed. We are not always fortunate enough to get complete closure of the entire palate at the third operation, when following this order of closure, but the work should be completed before the beginning of speech age to prevent the habit of faulty articulation being established, which is very hard to overcome later.

We have corrected several palates in older children and adults, but the articulation is only partly improved after this time. True speech training carried on by competent instructors will accomplish something, but must be carried out with much patience, time, and intelligence.

The preparation of the patient is important, especially in children. Although probably normal at birth, unless guarded and fed properly they will become greatly emaciated and become poor surgical risks. A good pediatrician is of great value in assisting along this line. The general condition of patient should be normal, and all pathology about the nose, throat, and mouth should be removed.

The results obtained in these operations will depend on the care and sense of proportion with which the flaps are shaped, the complete and even denudation, the relief of tension, perfection in apposition and suture placement, including dressings and apparatus to relieve all strain on stitches.

This patient (Fig. 1) a little girl of ten years, a neglected case with double cleft lip, complete cleft palate, premaxillary bone containing two large incisor teeth protruding forward three-fourths of an inch under tip of the nose, and crowded to right almost obstructing the right nostril.

Unfortunately, this case presented a problem much more difficult than in an infant with flexible bones, and required a procedure much more radical than drawing

together with wires. In fact, nothing short of dividing the outer plate of the maxillary bone with a chisel and producing a fracture of the bone would allow the alveolar arch to be bent inward and united. The bone was divided opposite the second bicuspid tooth, the edges of the hard palate and sides of the premaxilla properly denuded, and after a "V" section was removed from the premaxilla it was swung backward into position and the sides of the superior maxillary bone bent inward to complete the alveolar arch. All the teeth being firm at this time, they were wired together, firmly including six teeth in the fixation, which made a good alignment. The hard palate was pared and the soft palate split to the end of the uvula. The soft parts were elevated and detached from the palate bones, lateral incisions made to allow sliding to the center and the palate closed with horsehair and silkworm gut sutures. A large strip of sterile tape was passed around the lateral palate flaps through the side incisions and sutured in a manner to relieve tension, as advised by Mayo. This much work is ordinarily too much to do safely at one sitting, but we had good union with the exception of a small hole one-fourth of an inch in diameter in the middle of the soft palate, which was easily closed with three stitches about three months later.

The result of the completed alveolar arch and palate is shown in Figure 2. All teeth are now, two years after operation, perfectly sound and the palate quite firm. The general health and articulation are much improved.

Figure 3 shows another good view of the lip before operation. The operation for double cleft lip closure was done June 12, 1922, just three months after the palate operation.

Before beginning the lip operation I freshened the edges of a small perforation in the middle of the soft palate using three stitches to close, which only added a few minutes to the time of operation. The palate and alveolar process being now complete, I began the cleft lip operation by

paring the edges of the prolabium in proper shape to receive the lateral flaps from the lips which were shaped in the manner of the Koenig and Linhart method of cutting flaps. This allowed sufficient lip tissue to be brought to the median line below the prolabium to give the lip a good length without undue tension. The soft parts beneath the ala of the nose were freely divided from the maxillary bones to allow free movement toward the center of the face without undue traction on the stitches after they were placed. Three large silk worm gut sutures were placed some distance from the flap edges at points exactly opposite and where tension appears most prominent. The remaining stitches of horse hair were placed closely and through the skin edges, only sufficient in number to make an even approximation. The tissue at the floor of the nostrils was denuded in such a manner as to make both nostril openings the same size and of normal shape. Horse hair continuous suture was continued downward in the median line beyond the vermilion border and continued around the mucous junction of the lip beyond the lower edge. A few thirty-day chromic gut sutures closed the posterior surface of the lip. This completed a perfectly smooth closure. To prevent strain on the stitches I used two large buttons, lined with a thick pad of alcoholized gauze, placed inside of the face under the malar bone. These were drawn together by a strong silk worm tension suture passed through the buttons, the entire thickness of the cheeks, passing posteriorly behind the upper lip, and tied snugly enough to prevent any strain at all on lip sutures.

This was left in eight or ten days and I have never seen the slightest separation of the sutured edges in any of the cases which I have done. Brophy uses the Logan lip traction bow for this purpose, to which he attaches adhesive extending from the sides of the face, claiming it is better and saves making small scars in the face as results from a tension wire formerly used. I have never seen any perceptible scars following the tension suture properly applied and

kept frequently cleansed with an alcohol drip applied once or twice daily, and I feel much safer knowing that separation is utterly impossible. A small alcoholized gauze pad is placed over the wound and covered by adhesive strips extending from cheeks and crossed over the gauze dressing.

Figure 4 shows the result of this case completed in two operations. The width of the nose and the shape of the nostrils are normal and symmetrical. The scar tissue at the flap junction is narrow and smooth; articulation has improved and is continuing to improve and the general health and mental condition has also changed for the better. Before closing, let me repeat, the most important and practical point in the paper is to operate the hard palate before six months of age—the lip and soft palate a few months later when the condition of the patient is at its best.

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#### DISCUSSION.

DR. W. A. BRYAN, Nashville: I made a statement once that every patient who has been successfully operated upon for hare lip should be required to carry a photograph around to show how they looked before the operation. They look bad enough after they have been fixed, and only seeing how bad they looked before will prove that they have been benefited.

All hare lips are lateral. In the development of the child's mouth it comes that way (illustrating on blackboard). If the median portion comes down and unites in this way he has a left hare lip; if this way (indicating) a right hare lip, and if it comes down on both sides he has this appearance, a double hare lip without the intervening tongue of tissue that comes down. That is the embryologic origin of hare lip.

Another point: Here is the septum coming down from the base of the skull (indicating). That would run about this way in the ordinary palate (illustrating). We usually look at it the way Dr. Baird said and say there is not enough tissue, but if you bring them down in this way (indicating) there is enough.

I have never taken up the Brophy operation which Dr. Baird is doing for it forces these jaw bones in and inevitably narrows those, and I am assured by men who have worked with Brophy for a long time that those children are crippled in their upper air passage. I undertook to do one Brophy operation and the child died. I decided it was too much or that I did not know how to do it.

Here is another point: You have a tooth above way and with such completeness as to be of great and a tooth below (illustrating on board), another tooth below and another above; if you bring the two jaws together you are necessarily going to shift those teeth in a manner that will prevent proper development of the mouth and I am assured by some orthodontists that this is wrong. I have done a good many of these operations and I do them in this way—the lip and arch of the alveolus at the first operation and the palate at the second. We had a discussion in Chattanooga last year about this thing. Allen from New Orleans said he always did the inside first and the outside last and I told him then that if we want these patients to come back they will come back all right if you do that, but I do not know if there is any profit in that.

Looking at this way, here is an alveolar arch (illustrating) and here the cleft. What I do at the first operation, as early as possible, when one week or two or three weeks old, is to close this (indicating) and leave this alone, but as Dr. Baird suggested this must be closed if we want to get the best results prior to the time the child learns to talk. These children talk later than the other children because they have not the necessary machinery to talk with. They usually talk at about eighteen months and before that time I do the Langenbeck operation and unite them in the median line.

There is a point that men who have been doing hare lip and cleft palate work have been overlooking, and that is the machinery for talking must be there or we cannot hope to improve the child's speech.

Here is the soft palate swinging back here (indicating) and after that is repaired it must be long enough so that the children can swing it back and make contact with the posterior wall of the palate. If it is not the child will always talk in an abnormal way. If there is not a palate which is long enough to swing back and touch there is no hope of ever making him talk correctly. Much depends upon their parents. I have a friend, a doctor, Dave Myers, operated for cleft palate when he was nineteen. He used to talk like this (imitating cleft palate speech) and I would correct him and then he would try it again and would improve his speech right there. I have a woman patient whose life was made miserable by a wedge-shaped notch in her lip and a little cleft palate, but she was told how to overcome this defect in her speech and came back in a year, talking as plainly as I do. They must be eternally watched and made to say the words correctly, and if the child has once acquired what we call word ideas, if he has gotten into the habit of running the mechanism of his brain and connecting that up with his opinions and can reproduce the sound in his way, then the thing to do is to put him where he will learn

a foreign language and hear nothing else, and where he will have some one over him to make him speak correctly.

Dr. Baird said it was impossible to make these people do these things. I am fighting between the devil and the deep sea all the time—one says "you cannot do it," and then I go ahead and do it. I do not mean that it is easy, but if you persist it can be done. Another will say, "All you have to do is to take a couple of stitches and it will be all right." This is all wrong (illustrating on blackboard) because the operator instead of dropping it back when he operated so as to leave an arch like that, dropped it too far back and left it looking as if the front of his face had been kicked in. That is one thing. The second thing is to get these two nostrils the same size. That must be done. You cannot make them the same shape, that will come out in the future—give them a handkerchief and a bad cold and let them blow their nose.

Here is the middle of the nose (illustrating) the septum; these two ala must be set at the same level on the two sides or the patient will talk like the devil. Particular attention must be paid to that.

What about failures? If you will give me children big enough to mind me, and that know how to mind, we can get pretty uniform results. I think we could teach eighty-five to ninety per cent if we keep them under observation. If we let them go home too soon—one father talked me out of keeping the child under observation and I let him take it home. The mother went out to feed the chickens and took the child along. The child coaxed for food and the mother got out of patience and finally gave this little youngster a corn dodger to chew and cracked the whole thing open. If you can get complete union in seventy-five per cent of these cases you are doing good work. In twenty per cent you get complete union at the second operation and in the rest you will probably get it at the third operation. I have seen one child who did not have any intelligence, who did not have sense enough to cry. I operated on that child three times and did as good work as I ever expect to do, but never a stitch united. I did the work to keep the mother from going crazy, for she was wild about the child and insisted that something be done. I never refuse to operate on any of them, and my oldest patient was a man about forty-five years old.

If you noticed carefully the pictures Dr. Baird showed you you will recall that these patients with a cleft lip get a most awful expression of the face. Even if you cover up the mouth you can tell at once which has been operated upon and which has not, for they all perk up after operation and look much brighter and more contented.

DR. J. P. BAIRD, Dyersburg (closing): There is just one point I wish to mention which Dr.

Bryan brought up regarding the alignment of the teeth, which I'm glad he mentioned as it is one of the main points I tried to bring out in my paper. He takes issue with the method of drawing together of the superior maxillae claiming it would draw the upper teeth inward and out of line with the lower teeth. Were his diagram correct, which he has drawn on the board, showing the upper jaw of the complete cleft palate case directly over the lower jaw, it would be true that drawing the upper bones together would draw them inward and out of line. But the position of the alveolar processes is incorrectly drawn. The upper jaw is always in these cases wider and on closing will set some distance to the outside of the lower one. You can forcibly close the lower jaw which will spring the superior maxillae outward still further out of alignment and on account of this pathology nothing but drawing inward will make perfect coaptation between the upper and lower teeth.

This is the position taken by Dr. Brophy, who has perhaps operated more cases than any one in this country, and for this reason his opinion is of great value.

All of the cases I have operated during the last

two or three years I have operated in that manner because it sounds rational, and as a mechanical proposition it is proper. The upper jaws are too wide, are flexible at this time, and for that reason can be corrected more easily in the early months than if left until a later period.

So far as making the nostrils the same shape will say that I have had no trouble in getting both nostrils similar in most cases at the first operation and do not consider that a difficult point as I understand Dr. Bryan to consider it.

I would like to show just one more slide which I did not have time for before. This one (exhibiting picture) is a cleft in the right nostril due, according to the history, to a destructive ulceration of right nares and anterior portion of septum. I am showing this one for the reason that the cleft in the nostril was repaired by the same flap method used for a cleft lip. Also transplanted small strip from inner side of nostril to complete the septum. This girl did not suppose anything could be done for her, but the change was so satisfactory that her expression brightened up and general appearance was so good that she succeeded in happily marrying four months later.

## LACTIC ACID MILK IN INFANT FEEDING\*

MILTON SMITH LEWIS, M.D., Nashville.

LACTIC acid milk has been used to a certain extent for a long time in infant feeding, its use probably originating in Holland, but it is only in the last few years that it has been extensively employed.

The use of the lactic acid milk was founded in its ability to reduce intestinal fermentation and putrefaction, owing to the flooding of the intestine with lactic acid bacilli, which are antagonistic to, and suppress the growth of the harmful organisms present; also to the fact that lactic acid bacilli, when introduced into milk, multiply very rapidly and produce lactic acid fermentation of the milk sugar, with the formation of a considerable amount of lactic acid. When the acidity has reached a certain degree, the casein of the milk is precipitated in fine flakes. During the process of fermentation the sugar content is reduced. It is then a food low in fat and sugar, and relatively high in protein in an easily assimilable form, for inasmuch as the casein has been precipitated, it does not coagulate again in the stomach; it is of importance when it is used as a corrective diet in cases of sugar fermentation. It has a great deal of use in infant feeding, particularly as a diet in the diarrhoeal diseases of children, and also in cases of chronic intestinal indigestion in older children.

Marriot, some years ago, pointed out the value of lactic acid milk as a food for marasmic infants. It was shown that even young or undernourished infants could, to advantage, be fed on it undiluted, with considerable amounts of corn syrup. The tolerance for such a food was found to be very high.

Whether it be the naturally produced lactic acid milk, as in butter-making, sweet milk "soured" with a culture of lactic

acid bacilli, or that made by adding ordinary lactic acid, is all one; the latter being preferable for the reasons that it is easily obtained, is inexpensive, and most of all, that it can be prepared with a minimum of contamination.

There are several theories advanced as to why the tolerance for this food is high.

1. Cows' milk can be rendered more digestible by the addition of acid and therefore can be given in large amounts.
2. Sweet milk is capable of neutralizing, to a great extent, the acid of the gastric juice, and in this way seriously injuring normal digestive function. Acid milk, on the other hand, does not neutralize the gastric juice, but acts more like breast milk.
3. It is usually free from pathogenic bacteria on account of the inhibiting effect of the acid on bacterial growth.
4. The fineness of the curd is also assumed to be an added advantage.
5. A denaturization of the protein.
6. Stimulation of the flow of bile, pancreatic and intestinal secretions.
7. Favorable absorption of fats, protein and mineral matter.

Whatever the explanation, the effects of acid milk cannot be disputed. It has long been known that buttermilk is better tolerated by infants than sweet milk. The fact remains, however, that the infant cannot ordinarily digest as great a total amount of cows' milk as of breast milk, but we all know that some young infants may be fed on whole undiluted cows' milk given in the same amount as breast milk; but the majority, however, when so fed, fail to thrive, and develop later gastro-intestinal and nutritional disturbances. This fact has led to the common practice of feeding infants smaller amounts of cows' milk than of breast milk, and making up the difference in calories with some form of carbohydrate. Most systems of modification, in their ultimate analysis, merely accomplish

\*Read before the Middle Tennessee Medical Society, Lewisburg, November 13-14, 1924.

a reduction in the total amount of milk fed, and supply the necessary calories in other ways. This is true of all proprietary preparations, butter flour mixture, etc.

All these methods have distinct limitations, especially in the cases of infants having lowered digestive capacity; not infrequently the amount of milk needed is more than the amount that may be effectively cared for by the gastro-intestinal tract.

The essentials of a good artificial food are:

1. That it be digestible.
2. That it should contain the right proportion of assimilable substances to build up a healthy body.
3. That it should not contain bacteria of such numbers and kinds as to cause disease.
4. That it should be inexpensive and easily obtained.

To the mother the first essential seems most important, while the second seems most important to the clinician. I need scarcely say that a universally suitable food is an impossible attainment. Yet too little attention is paid to the idiosyncrasy of the infant; for we all have witnessed breast-fed twins of approximately the same birth weight, where one thrives on the mother's milk and the other wastes. One baby acts for an advertisement for a food on which others would develop rickets, scurvy, or what not. So in arriving at a sane judgment on the merits of food, full allowance must be made for the variability of the human media. It has been a matter of common experience that infants suffering from gastro-intestinal disturbances are able to take larger amounts of milk artificially soured by lactic organism than they can of sweet milk. We have come to regard buttermilk and protein milk as our chief reliance in the feeding of infants with gastro-intestinal disturbances. Buttermilk, that is to say, fat free lactic milk, is low in caloric value, and although a useful food during a period of lowered tolerance, is not a food on which an athreptic infant will gain weight consistently, unless the caloric value is increased by the addition of sugar and starch.

A certain amount of fat can be tolerated by almost any infant, especially in a lactic acid milk mixture. On this assumption I have fed undiluted lactic acid milk containing amounts of fat up to the amount contained in whole milk, and have been convinced that the great majority of weak marasmic infants tolerate extremely well undiluted whole lactic milk in fairly large amounts.

Now, lactic acid milk being well tolerated, but being low in carbohydrate value, we must make up this deficiency. Most sugars readily undergo fermentation, but dextrins do not, therefore commercial corn syrup, containing glucose, maltose and fifty-five per cent dextrine, seems to be the carbohydrate of choice to add to the lactic acid milk. With this mixture scarcely any fermentation can occur before absorption, and there is little or no tendency to diarrhoea, even when large amounts of this carbohydrate are added. In some cases there seems almost to be no limit to the amount of carbohydrate that can be added to such a milk mixture. A great advantage is that corn, or karo syrup, is inexpensive and obtainable everywhere.

*Preparation of Mixture.*—It is best, if possible, to use an artificially made preparation, rather than the natural buttermilk, as the age and purity of the latter are often doubtful, and it may be infected with undesirable organism.

It may be easily prepared in the home with a good grade of cow's milk and lactic acid. The sweet milk is first sterilized by boiling it from two to five minutes; when thoroughly cooled remove the scum, then add with an eyedropper and stirring gently the while, ordinary lactic acid U. S. P. 120 m. to each quart of milk. The syrup is now stirred in until it is thoroughly mixed, using equal parts of water and syrup. The amount of syrup usually added to the mixture varies according to the age of the patient; generally speaking one ounce for infants up to two weeks of age; from one and a half to two ounces for older ones, and if undernourished, larger amounts can

be added up to four or five ounces. This syrup has a caloric value of 120 calories to the ounce.

If the acid is added too quickly or if the whole amount is added at one time, or if the milk is too warm, large clumps of curds will separate. When properly prepared, a smooth, homogenous preparation should result, the concentration of acid is the same as that occurring in ordinary buttermilk, the taste and general physical properties are the same. The entire day's feeding is made up at one time, and kept cool until used. It keeps well even if not put in a refrigerator, its acidity being such that bacterial growth is almost inhibited.

No dilution of this milk is necessary, excepting when there is reason for limiting the amount of milk taken, as in hot weather, or in cases convalescing from severe diarrhoea.

The amount of this mixture to be given at each feeding is about the same as customary for other used formulas, that is, the average infant will take feedings of about two ounces at one week, three or four ounces at one month, six ounces at four months, seven or eight ounces from seven months on, every four hours.

Children under six or seven months of age usually take lactic acid milk preparation as readily as any other milk, but older children, particularly those over one year are likely to refuse it for the first few feedings, but is a rare thing to find a baby who will not take it eventually.

The character of the stools of infants fed on this mixture are light brown, well formed, and pasty, the number averaging from one to three a day.

The gain in weight of infants fed on the whole lactic acid milk begins when a sufficient caloric intake is reached, and generally continues steadily, interrupted only by acute infections. The number of calories required before an infant will gain weight is often high. Few infants whose weights

are very low, as thirty to fifty percent below normal, will gain on less than eighty to one hundred calories per pound.

It might be well to draw attention to the fact that, although the food is high in carbohydrate, it is also high in protein and in fat, the relative portions being about the same as those in ordinary milk mixtures. It is essentially a concentrated food, therein lying its chief advantage.

If infants can take only a limited number of feedings in twenty-four hours, and yet requires a large caloric intake, the only solution is to give them a food containing a large number of calories per ounce. This food has a fuel value of twenty-five to thirty calories to the ounce, a larger amount than is contained in breast milk or in any other of the usual formulas that can be fed with safety.

#### CONCLUSION.

Lactic acid milk is an excellent food for healthy or sick infants up to one year or more. It is especially well digested by the premature, marasmic, and infants suffering from diarrhoeal diseases. Aside from the theoretical reasons given that it is easily digested, the only real test of the value of any method of infant feeding is the behavior of the child receiving it.

In the last few months I have had the opportunity of feeding a number of infants with this preparation and have been convinced that it is of distinct value in certain cases. In fact I have fed it to healthy and sick infants with uniformly good results.

Whole lactic acid milk enriched with corn syrup is simply a food that enables one to furnish a considerable amount of nutriment in an easily assimilable form to infants needing a large amount of food, but with intolerant gastro-intestinal tract.

Its ease of preparation, its inexpensiveness, its purity, and being almost "fool-proof," makes the food a valuable addition to the many widely used formulas.

## RELATION OF ENDOCRINE GLANDS TO GROWTH DISTURBANCES IN CHILDREN\*

ROBERT B. WOOD, M.D., Knoxville.

**A**BNORMALITY of growth has been an interesting question to both the profession and to the laity from time immemorable, and interesting pictures are painted in fiction of these unusual specimens. It has not been, however, but a few years since any attempt has been made to understand these aberrations of growth.

An abnormality in any condition is determined of necessity by variable markings, and there can be no clear-cut line of demarcation between the normal and pathological. Yet we encounter such gross variations from our pliable standards that it is not difficult to classify them as abnormalities. So it is with growth disturbances, which may vary either above or below standards of arbitrary fixation.

Before entering into a discussion of the causes of abnormal development, let us glance, hurriedly, at those factors which go to make up for the normal. Going back into embryology, we were taught that there were certain inherited growth tendencies, latent in the fertilized ovum, and as a result of trophic influences, metabolic process and possible extraneous influences, development was made possible.

It is true we must consider the innate species limitation with its influence on development. That there should be an innate tendency of an individual to approximate a normal standard is evident, and the progress to completion rests partly in the physical properties of the cytoplasm, which also contains the anlage for each different structure.

Granting the above facts, there yet remains a lack of a substance to keep inactivated these latent properties of tissues,

and it is this substance which, I believe, is the product of the glands of internal secretion acting not as sole causative agents of growth, but as accelerators to a preexisting tendency to action on the part of the organism. Whether the theory holds good or not we realize there must be a governor or aid to normal development, besides these growth tendencies, metabolic influences and extraneous factors, as food.

McCollum and others have placed the value of properly balanced calorific requirements, with their essential vitamins, before us in such a way as to make us realize that without these there cannot be normal development.

Of other outside influences, which interfere with normal development, there will be no mention, but I wish to briefly call your attention to the endocrine glands and the part they may play in abnormal physical growth. Their role in metabolism and growth seems to be established upon a firm foundation, but it is often difficult to separate the conclusions from the land of facts and from the land of surmise. But the mass of animal experimentation, as well as the wealth of clinical observation, has placed this system in its rightful field of medicine. We are aware that it is not possible to separate the endocrine chain from the autonomic nervous system, for without the latter the needs of higher forms of animal life would not be met; but these two systems working as excitors, each to the other, make possible the coordination of the complex organisms. Any disturbances in the balance of one is immediately reflected in the other as well as in the central nervous system.

We also know that certain of the endocrine chains are the regulators of various

\*Read before the East Tennessee Medical Association, Harriman, October 9, 10, 1924.

metabolic processes, vital to the welfare of the organism, although we are not aware of the intimate process of hormone action. Of the glands undoubtedly influencing growth and development, we have the thyroid, pituitary and sex glands, and I shall not discuss the possible connection of abnormal development seen in pineal and adrenal gland disturbances. The thyroid gland in all quadruped vertebrates is absolutely necessary for growth and development, but in lower quadrupeds the absence is not incompatible with life. In man both the ontogenetic and the phylogenetic development are dependent on the thyroid or its active principle thyroxin (Kendall), which acts as a catalyst, accelerating the formation of potential energy. In addition to stimulation of growth—metamorphosis—the thyroid stimulates basal metabolism.

The influence of thyroid feeding on normal growing individuals yields varying results, some reporting a slight increase above normal, others a retarding influence. An excessive amount produces a picture exactly similar to clinical hyperthyroidism.

In mammals, removal of the thyroid during prepuberal life leads to an almost complete cessation of growth, a lack of ossification of bony skeleton, a poor and irregular development of dentition and a retention of infantile condition of sex organs, a loss of energy and a low metabolic rate. As proof of its being of thyroid deficiency the administration of thyroid substance causes a resumption of growth and normal activity.

The picture of the hypothyroid child, especially that of thyroidism, needs no description. But in that group in which the symptoms are mild I would like to call your attention to a few points in the case history of these infants.

I do not agree necessarily with those who say that a fetus possesses at birth a momentum of growth sufficient to carry it for the first few years of life. Glancing at these cases we note a delay in dentition, an advanced age of walking and talking, and mental condition which most assuredly places it in an abnormal group.

Let us now consider the part played by the pituitary, considered by some as of more importance than the thyroid in regulation of growth. In its relation to growth only the anterior portion of the gland seems to be involved and has a specific action on bone development. In hyperactive conditions of this gland there is a delayed closure of epiphyseal junctures which, with the excessive stimulation from the growth hormones, produces in the young an increase in length of long bones, resulting in giantism if the condition persists for a sufficient length of time. On the other hand, a hyperactivity may be replaced by a hypoactivity and we have the symptoms of the later disease grafted upon the former. Besides the skeletal overgrowth in hyperpituitarism we find a premature development of sexual organs and sex characteristics. Many believe that the sexual complications are not due to action of pituitary direct but its influence on other glands. Be that as it may, we know the relationship of pituitary to other glands is close by the reciprocal action of thyroid and pituitary as is seen by the enlargement of pituitary during pregnancy and following castration. Experimental work of Goetsch, Falta and Cushing should dispel any doubt that the sexual development is result of other than pituitary activity.

Hypoactivity, on the other hand, produces the opposite effect, namely: delay in bone growth, lack of development of sex organs, this latter being due to failure of development of interstitial glands. In the female menstruation will not take place, and in later life amenorrhea and sterility is the rule.

In the male there is a tendency to the feminine type of skeletal structure, small hands and feet and other markings characteristic of this disturbance. Many differences exist in the clinical picture owing to the time and intensity of the onset of the deficiency. Bell classifies hypopituitarism before puberty into:

- (1) Infantilism, somatic and sexual without adiposity (Lorain type).
- (2) Stunted growth with sex infantilism and adiposity.

(3) Overgrowth with some adiposity and genital inactivity.

The sexual glands you will note are intimately associated in diseased conditions of the pituitary. The influence of these glands, *per se*, has been ascertained mostly through animal experimentation and transplantation experiments. The evidence from loss of sex glands of human individuals before puberty is rare. Tandler and Gross have accurately described such a group in Roumania and as typical result of such an operation we note long disproportionate limbs, small head, lack of beard and pubic hair. This is undoubtedly due to lack of the Leydig cells, which alone are responsible for masculinization and development of secondary sex characters; and by characters is meant those markings peculiar to the sex in question and having nothing to do with reproduction.

Among the abnormal growth disturbances come the classes of dwarfs, an interesting but unsatisfactorily classified group. I merely wish to call your attention to the achondroplasiac group and their picture as depicting the opposite condition of the eunuchoid group. They possess short limbs, large heads, excessive strength and muscular development, and have marked secondary characteristics. The ossification of epiphyseal centers is early. These characteristics have led many to believe that the whole picture is result of hyperactivity on the part of the sexual glands. The primordial dwarf, with its proportionate but small stature, is an exact opposite of the giant. There are two more points to which I wish to call your attention as being influenced by endocrine secretion and that is the development of overweight and eruption of teeth and bone development.

It is at times difficult to arrive at conclusions as to the gland at fault in overweight children. Englebach directs us to two important points in their history and physical examination. The history must include careful notation on weight at birth, the progress and age of the child on walking, talking and eruption of teeth.

It will be noted that there is a tendency to overweight at birth in the hypothyroid child which may later disappear or remain, owing to beginning activity of the gland. The age of walking, talking and teething is delayed. The x-ray will reveal that instead of having certain bone nuclei present normal for its age there will be an absence in the individual in question. This is probably of more significance than any laboratory report we may receive. The distribution of the fact is characteristic for the gland in question and in this particular condition we note a general distribution with excessive deposits above the clavicle or the lower limbs and forearms. Dorsal padding is not a very reliable sign in children.

The pituitary overweight usually is in a child with a normal birth weight and progress record until the fourth or sixth year. Its age for walking, talking and dentition is normal and its mentality is perhaps above the average. The only abnormality noted is excessive weight, with its characteristic distribution about the girdles. If associated with hypoplasia of sex organs we note a late fusion of epiphyseal junctions of long bones.

As to treatment of these conditions much can be accomplished by patience and persistence in glandular extract feeding, the establishment of a correct regime of living with its proper food, and elimination of other factors interfering with proper nutrition.

The use of glandular therapy, without the proper diagnosis, by misguided workers who argue from false premises toward faulty conclusion, is to be condemned. Also it is to be regretted that there should be a group who would lay at the feet of the endocrine glands the cause of an abnormality, whether it be physical, mental or behavioristic, helping to relegate endocrinology into mythology. It perhaps is not an exact science, but that it has a definite place in the field of pediatrics as well as general medicine is the idea I have tried to convey to you.

## ADULT SCURVY

JACK WITHERSPOON, M.D., Nashville.

**S**CURVY is described as one of the food deficiency diseases. It is characterized by anemia, spongy gums, stiffness, and arthritis, especially of the knees; and a tendency to hemorrhages about the mucous membranes and beneath the skin.

In June, 1924, an adult patient was in St. Thomas Hospital with scurvy, and her symptoms were so peculiar and her relief so striking we thought it valuable to make a detailed clinical report of her case.

Mrs. M. V., aged 25, first came under observation as a private patient in the fall of 1921, complaining of stomach and bowel distress of over seven years duration. This distress consisted of burning in the epigastrium after meals, and occasional vomiting for relief. She had gas in the stomach and bowels, with much movement of gas, and intestinal colics; occasional spells of diarrhoea, interspersed with periods of constipation, and passage of mucous by the bowel. There had been continued loss of weight from 125 to 85 or 90 lbs.

Three years before a diagnosis of ulcer of the stomach had been made; then an operation had been done, at which time the appendix and hemorrhoids were removed. A sub-mucous resection of the nasal septum had been done. There was only temporary relief of her complaints.

Physical examination showed an emaciated anemic woman. The heart and lungs were not abnormal. The teeth were good and the tonsils not suspicious. The skin was dry and slightly jaundiced. The abdomen only showed evidence of marked visceroptosis. The pelvis seemed negative to disease. The stools contained mucous and a few active amoeba, and many cysts. The blood showed a marked secondary anaemia and the Wassermann negative. This was October, 1921. She said that while she was sick all the time, she seemed worse in the spring and fall.

She was put to bed in the hospital and given a course of treatment which caused the disappearance of the amoeba, and which improved her blood color, but she continued to complain of gastro-intestinal colics and gas. An x-ray of her colon showed marked chronic ulcerative colitis. There seemed to be no areas of normal lumen in the large bowel. For the next two years the treatment consisted of trying to correct the function of this ptoosed, diseased intestinal tract.

About this time we obtained from Dr. Bass a culture of *Bacillus acidophilus*, and through the co-operation of Dr. William Litterer she was supplied with a quart of fresh *acidophilus* milk daily. (Sweet milk autoclaved and cultured with *B. acidophilus*.)

She was able to take this milk, toasted crackers and strained bean soup with fair comfort; and this with some jello and milk sugar was about

her diet until she came into the hospital the second time. Any meats, vegetables, greens or fruits seemed to increase the gas and the colic or cause entero-spasm distress. She had had many doses of neo-salvarsan, sodium cacodylate and acids, but the medicine that seemed to help her most was a mixture of bismuth, calcined magnesia and pulverized prepared chalk.

In March, 1924, she began to have swelling about her knees, with some stiffness of all the larger joints, and there was a little fever. No focal infection, other than the bowel, could be found.

She complained that her gums were friable and that her tooth brush caused some bleeding; then the whole of the gums became sore and swollen and spongy, so that her teeth were almost covered. The gingival swelling was covered with a greyish membrane, the breath was very foul and no Vincent's angina organisms could be demonstrated.

She then developed a large hematoma in her left popliteal space. This was followed by a generalized purpuric rash on her extremities and she was sent to the hospital. At this time the interne wrote her history, correlated her history with her physical findings, and made the diagnosis of adult scurvy.

She was given orange juice, lemonade or lime juice every four hours, and in three or four days her mouth was in so much better condition she could take a soft diet. She was given non-pasteurized milk and green vegetables and she was made to understand that in spite of the discomfort these foods caused her they were necessary to save her life.

The purpura faded, the hematoma was absorbed, the arthritis disappeared, and in twenty days she was able to leave the hospital walking, with a gain of eight pounds.

At present she has gained thirty pounds and is rosy and well, but still has her entero-colitis.

Scurvy is a disease of the oldest times. It is at the present time called a deficiency disease and the lack of an unrecognized substance contained in certain fresh vegetables, fruit juices and fresh meats, called vitamin, is held responsible for this peculiar malady.

Scurvy, or Scorbutus, in the oldest times, was not a maritime disease, for then sea voyages were not extensive; but scurvy attacked the inhabitants of beleaguered cities, armies in camp and expeditions, and killed great numbers. In 1497, DeGama found a passage to the East Indies by Cape of Good Hope and 100 of his 160 men died of scurvy en voyage. The earliest good de-

scription of this disease is found in the records of this voyage. It is said the men became weak and stiff in their joints and they were unable to work. They could not see at night. Their mouths bled, their gums rotted, and their teeth fell out and they were covered with black spots when they died.

One would be interested in reading a medical text to note the various theories advanced as to the cause of this disease. The chloride excess, the potassium deficiency and the infectious nature all had strong adherents.

In 1535, when James Cartier made his second voyage to New Foundland, he found the colony there afflicted with this pestilence and he charged them not to come about his ships or his men, but in spite of this his men were soon taken down and he lost more than thirty-two of his best men that winter.

As far back as 1564 the value of fresh fruits and vegetables as a prophylactic and curative agent in scurvy was known to the Dutch, and in 1600 it was successfully employed by the British navy. In 1796, lime

juice was ordered as an essential part of the naval dietary, and this resulted in a quick disappearance of scurvy from the British service afloat.

This order was also applied to the mercantile marine and to jails and alms houses. Vetter says the Indians prevented scurvy in winter by eating freshly killed meats. Steferson's expedition, two years in the Arctic, avoided scurvy by adopting the Eskimo diet.

How long it takes one on a vitamin diet to develop scurvy has been studied by experiments with guinea pigs fed on rice and pastuerized milk. They develop scurvy symptoms in five or six weeks.

There is a period of depletion in which the patient feels fairly well, is able to be up and work, and eats with fair appetite, and in man this is dependent on the amount of anti-scorbutic substance stored in his body, and may be five, six or seven months. Then the symptoms begin as in the patient, with knee pains, sore mouth, anemia and tendency to bleeding. The relief is correction of the dietary deficiency.

**THE JOURNAL**  
**OF THE**  
**TENNESSEE STATE MEDICAL ASSOCIATION**  
**Devoted to the Interests of the Medical Profession of Tennessee**

Office of Publication, 420 Jackson Bldg., Nashville, Tenn.

J. F. GALLAGHER, M.D. -----Editor  
R. C. DERIVAUX, M.D. -----Associate Editor

DECEMBER, 1924

**CHRISTMAS GREETINGS**

"Merry Christmas and Happy New Year." That time-honored expression would almost seem trite did it not fully express the sentiments of friend to friend in this season of Christmastide. And it is with this feeling that those to whom has been entrusted the task of publishing the Journal extend to the members of the State Medical Association the season's greetings. In the spirit of the season; in the celebration of the birth of the Christ Child; in the symbolism of the birth of a new year; let us make a high resolve to make the coming year our best.

**THE FIRST TO REPORT**

On the first day of December the Polk County Medical Society held its annual meeting. On that very day the Secretary, Dr. F. O. Geisler, sent in a list of the newly elected officers, together with a list of the membership and their dues for the ensuing year. Likewise on December 1, the Anderson County Medical Society held its annual meeting, and Dr. J. S. Hall duplicated the performance. The Smith County Medical Society did not hold its meeting until December 5, but Dr. B. J. High sent in his completed report. That is promptness and efficiency which this office would like to see imitated by the other component societies.

**MEMBERSHIP AND FELLOWSHIP**

Membership in a component medical society automatically makes one a member of the state society—provided he pays his dues. Membership in a constituent state society automatically makes one a member of the American Medical Association—

whether he pays his dues in the latter or not. Subscription to the Journal of the American Medical Association—which is tantamount to the payment of dues—makes one a Fellow of the American Medical Association. There has never been any real plausible explanation put forward as to why this distinction between membership and fellowship exists. Only a Fellowship carries with it any of the benefits and privileges of the organization, so why is a membership?

In this connection, however, it may be said that a physician cannot invest five dollars with a greater prospect of real benefit than a subscription to the Journal of the American Medical Association offers. It is unquestionably the greatest medical publication in the world. Inasmuch as Dr. Olin West has recently been made General Manager of the A. M. A., to succeed Dr. George H. Simmons, retired, would it not be a graceful compliment to our former State Secretary to greatly increase the names of Tennessee physicians on the Fellowship roster of the A. M. A. This office will be glad to co-operate with the county secretaries in this drive.

**NEWS NOTES AND COMMENT**

Pay your dues now.

Dr. W. A. Oughterson of Nashville addressed the Knox County Medical Society December 2.

The Knox County Medical Society voted a change in the constitution and by-laws, raising the dues to \$15.00.

The Appalachian Hospital of Johnson City has been given Class A rating by the American College of Surgeons.

Dr. C. A. Forgey, of Columbia, was operated on for appendicitis at the Kings' Daughters Hospital November sixteenth.

Dr. Fred Ben Quincy of Welch, West

Virginia, has located in Knoxville. He is limiting his practice to diseases of children.

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At the recent meeting of the American College of Surgeons, Dr. Frank Ward Smythe of Memphis, the son of our distinguished president, was elected to Fellowship.

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Dr. Edward T. Newell, of Chattanooga, was elected president of the Southern Railway Surgeons at the recent meeting of the Southern Medical Association in New Orleans.

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Dr. E. M. Harrison, a former resident of Chattanooga but who has been practicing in Middlesboro, Kentucky, for the past year, has returned to Chattanooga and opened offices in the Volunteer Life Building.

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Dr. B. T. Terry, of the Department of Pathology, School of Medicine, Vanderbilt University, was awarded the first prize in the Pathological Exhibit at the recent meeting of the Southern Medical Association held in New Orleans.

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It is with extreme regret that this office learns of the death of the wife of Dr. B. D. Bosworth, of Knoxville, which occurred on November 3rd. As is well known, Dr. Bosworth is an ex-president of the State Association. We extend to him, on behalf of the profession of the state, our deepest sympathy.

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The Christmas Gift the Secretary has reserved for the members of the Association is the address delivered by Dr. Hubert Royster of Raleigh, N. C., at the Knoxville meeting, in April. It was delivered impromptu, in the absence of an invited guest, but it is a gem of epigrammatic diction and sane thought.

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At the recent meeting of the Tri-State Medical Society held in Memphis, Dr. W. H. Anderson of Booneville, Miss., was elected

president, Dr. H. W. Priddy of Charleston, Miss., vice-president for Mississippi; Dr. Chas. P. McCracken of Jonesboro, Ark., vice-president for Arkansas; Dr. A. A. Oliver of Paris, Tenn., vice-president for Tennessee. Dr. A. F. Cooper of Memphis was reelected secretary. The meetings are only held in Memphis and the association will re-convene there next year.

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At the meeting of the Tri-County Medical Society—Carroll, Weakley and Henry—held at Huntingdon, November 14, Dr. V. E. Massey, of Huntingdon, was elected president. Dr. Harris Collier, of McKenzie, was elected vice-president for Carroll County; Dr. W. W. McBride, of Gleason, vice-president for Weakley County; Dr. E. A. Travis, of Como, vice-president for Henry County. Benton County has joined the society and will have as its vice-president Dr. W. P. McGill, of Camden. Dr. R. M. Little, of Martin, was re-elected secretary-treasurer. A banquet was tendered the society at the regular meeting in McKenzie at the Hotel Virginia by the retiring officers.

## MISCELLANEOUS

### THE GORGAS MEMORIAL.

During the past year, throughout the United States, the work of organizing the Gorgas Memorial State Governing Committees has been progressing. In some states the response has been most enthusiastic, while in others considerable effort has been necessary to bring home to the doctors the importance of this movement to them, individually and collectively. Inasmuch as the Gorgas Memorial is primarily a medical movement, and as such must have the united support of the profession if it is to make the proper impression on the general public, we take this occasion to outline briefly the Gorgas plan and to request the co-operation of our colleagues in bringing to a successful issue this national health program.

We are planning to establish a Memorial for our former chief, Major General William Crawford Gorgas, not of marble or bronze, but a permanent living organization in the form of a great health foundation typical of his work in research and curative medicine that will unite lay men and doctors in an intelligent effort to obtain better personal health—a health guild that

will be supported and directed by the representatives of curative medicine.

The Gorgas Memorial consists of two phases:

1. An institute in Panama for research in tropical diseases.

2. A health educational program in the United States and other countries that wish to co-operate and participate in the movement.

We are living in an age when people are knocking at all doors of knowledge and demanding that they be admitted. In the field of medicine who are so well fitted to meet this demand as those actually engaged in the practice of medicine? The doctors have a far more interesting and important message to deliver than any other group.

In the United States today there is scarcely a community that has not its full quota of irregular "medical practitioners," so called. In many states there are strong organizations of the representatives of the various cults, whose theories are imposed upon an uninformed public. Public ignorance is encouraged by professional reticence and the result is the astounding growth of unscientific methods. If the profession is to maintain the high standing to which centuries of labor in behalf of suffering mankind entitles it, it is essential that a definite organized effort be made to familiarize the public with such facts as will impress upon it the importance of medicine's contributions to human welfare. A constant fund of proper health information through the newspapers, magazines, lectures, moving pictures and the radio, furnished by medical men and women of known reputation and standing, will direct the public to the proper source for medical advice and gradually eliminate the irregular practices constantly increasing.

One of the objects of the Gorgas Memorial is to furnish a channel through which this kind of information may be disseminated. It cannot be done by individual physicians. It must be conducted by a dignified, ethical organization, controlled by the medical profession. The name of Gorgas is synonymous with "better health." No more appropriate name could be adopted for a movement that has for its object the development of co-operation between the public and scientific medicine for the purpose of improving health conditions by implanting the idea in the mind of every individual that scientific medicine is the real authority in all health matters and as such should be recognized as the source of health instruction.

Before we ask the public for financial and moral support, it is essential that the doctors of the country unite in support of this program. As a means to this end, governing committees are now in process of organization, on the basis of 100 members to every 1,000,000 population in each state. Seventy-five per cent of the personnel of each committee will consist of medical men and twenty-five per cent of influential laymen and women. The permanent activities of the organization will be supervised by these committees in their respective states, in co-operation with the National Executive Committees.

An organization cannot operate without funds. We are endeavoring to raise an endowment of \$5,000,000, the interest only of which will be utilized

to carry on the work. The principal will be invested in trust securities and remain intact. None of the money thus obtained will be spent for building or equipment. The Republic of Panama has donated the site and guaranteed the initial buildings and equipment for the tropical research laboratories, in recognition of Gorgas' great work in Panama. Those invited to serve as founder members of the state governing committees are requested, as they accept membership on the committee, to subscribe \$100 to the endowment fund, payable within two years. Every individual on the state committee is a contributing member. When the medical nucleus of the organization is complete, a general appeal for funds will be made to the public.

The American Medical Association at its recent meeting in Chicago passed the following resolution:

"Resolved, That the House of Delegates of the American Medical Association, convinced of the great promise which the Gorgas Memorial contains of benefit to humanity through improved knowledge of preventive medicine and tropical disease, and of its peculiar adequacy, as a tribute to our great leader and sanitarian, recommend to the organized profession of the country, through its constituent state and county societies, the enthusiastic support of the project."

"J. A. Witherspoon, Tennessee; Joseph Rilus Eastman, Indiana; Thomas Cullen, Maryland; W. H. Mayer, Pennsylvania; F. B. Lund, Massachusetts."

The Memorial has also been endorsed by numerous other medical and civic organization.

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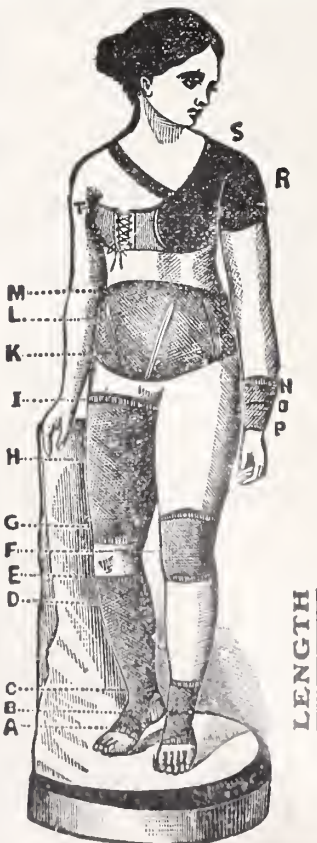
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# THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION

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## SPLENECTOMY, WITH REPORT OF CASE\*

BATTLE MALONE, B.A., M.D., F.A.C.S., Memphis

WHILE the primary object of this paper is to report a case of dislocated spleen, with twisted pedicle, advantage is taken of the opportunity to discuss briefly the indications for splenectomy, and to say a few words about the technique of the operation.

By far the most usual condition in which splenectomy is done is Banti's disease. The results have been gratifying. It so frequently happens, however, that cases presenting the symptoms complex called Banti's disease, come to operation after there is such a degree of liver cirrhosis that we cannot hope to obtain a complete cure. If these cases could be gotten to operation earlier, or still better if cases of splenic anemia were splenectomized before the later symptoms forming the syndrome of Banti developed, undoubtedly a much higher percentage would be cured.

With us in the South the next most important type of splenomegaly is that due to chronic malaria. Inasmuch as the pathological changes in malarial spleens are quite similar to those in splenic anemia, it is reasonable to believe that the same changes will take place in the liver, producing in turn gastric hemorrhages, ascites, etc. It has been the opinion of the writer for

many years that in many cases diagnosed Banti's disease the cause is primarily malarial.

We are all familiar with the "ague cake," which is the name commonly given by the laity to the enlarged spleen of malaria. This will almost always recede rapidly under proper anti-malarial treatment; not always, however. Whether in some cases the blood of the patient becomes quinine fast, or because of secondary pathological changes in the spleen, it remains enlarged and the patient will not be cured of malaria until splenectomy is done. It has been observed that in these cases, following the removal of the spleen, severe malarial paroxysms occur, so quinine should be administered as a post-operative routine.

I have had no experience with syphilis of the spleen, but what has been said of malarial spleens can be applied to splenomegaly, syphilitic in origin. It is claimed that many cases which have become drug fast yield readily to medication after splenectomy.

Wandering, floating or movable spleen may be a complication of enlarged spleen from any cause. A dislocated spleen is one which has become fixed in an abnormal location. Such spleens will usually require removal sooner or later. Twisting of the pedicle is a frequent accident in this class,

\*Read by title before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

which of course urgently demands operation.

Tumors of the spleen are rarely seen. Cysts, particularly cysts following trauma, are commoner than solid tumors. One could hardly conceive of a malignancy of the spleen recognizable before metastasis, still such conditions must be considered among the indications for splenectomy.

Splenectomy has been done frequently both for pernicious anemia and splenomyelogenous leucaemia. Fifty cases of pernicious anemia were splenectomized at the Mayo Clinic, and then the operation was discontinued. At the same clinic splenectomy, for myelogenous leucaemia, seems to give better result than any other form of treatment. Occasionally in both conditions we find isolated reports of single cases being benefitted by the operation, but the evidence does not seem to be such as to warrant the operation being considered justifiable in these two conditions.

There are, however, two blood dyscrasias other than those just mentioned in which splenectomy promises a definite cure. These are hemolytic icterus and those due to purpura hemorrhagica, in which the blood platelets are decreased to 40,000 or below.

Injuries to the spleen, either from subcutaneous rupture, or from gunshot or penetrating wounds of the abdomen, are frequently of such nature as to require splenectomy. Sometimes the spleen can be safely sutured, but if there is much of a wound splenectomy is the wiser procedure.

As to the technique—that offered by Balfour is now accepted, and probably most frequently practiced. Personally, I prefer the high left rectus incision to the median, for the reason that it affords the most direct approach, not so much to the spleen as to the vascular pedicle, which is the part with which we are chiefly concerned.

Enlarged spleens are practically blood tumors, and the thought of hemorrhage must be uppermost in the mind of one during the operation. The value of Balfour's suggestion, that the artery be compressed by the fingers, allowing as much blood as

possible to run out before applying clamps to the pedicle, is quite apparent. It will be found very well worth while to get to the pedicle and clamp or ligate it as soon as possible, and this is more particularly true where the spleen is adherent.

Since practically all types of splenomegaly are accompanied by anemia the advisability of transfusion should be considered. A most valuable suggestion was made by Sir William Taylor, by whom it was first practiced in 1922, namely, that the blood from the spleen, after its removal, be allowed to run into a basin containing citrate solution and immediately put back into a vein. A somewhat similar procedure can be followed in ruptured spleens, provided there were no injury of hollow viscera, by collecting the blood from the cavity, citrating it and auto-transfusing. Burch reported a case in which he had resorted to this expedient in 1922. It is a matter of common observation that stormy weather can be safely predicted for the first two or three days after splenectomy, and we must marshal all the forces at our command if we are to get the patient safely by.

The case reported is that of Mrs. N.—referred by Dr. D. C. Carter—admitted to Lucy Brinkley Hospital Dec. 8th, 1923. A poorly nourished woman of 33, mother of six children—no miscarriages.

She had had chills and fever during the summer and fall and had knowledge of an "ague cake" for two or three months previous to the present acute illness, which began six days ago.

While lifting some kitchen utensil she was seized with an intense pain along the left costal margin—noticed soon afterwards the absence of the "ague cake," and detected the presence of a mass in the right lower quadrant, which rapidly increased in size. She had suffered great pain and had been under the influence of morphine during the past six days.

Upon examination a mass was found, occupying the right lower fourth of the abdomen. There was a well defined ridge along the upper margin extending up to the umbilicus. The mass was tender and efforts to move it caused great pain.

Diagnosis—Dislocated spleen with twisted pedicle.

The blood showed hemoglobin eighty-five per cent; coagulation eight min.; erythrocytes, 4,280,000; leucocytes, 8,800. Differential—Small lymphocytes, twenty-three per cent; large lymphocytes, eight per cent; polynuclear neutrophils, sixty-nine per cent.

With this blood picture, combined with the history of chills, we felt safe in assuming that we were dealing with a malarial spleen.

Operation, December 8, 1923. High left rectus incision—spleen very large, twisted one-half

revolution on its pedicle, lying in right lower quadrant of abdomen—no adhesions. Tail of pancreas was densely adherent to under surface of spleen and along the pedicle. Abdomen filled with large amount of bloody fluid. Spleen was delivered, pancreas separated, pedicle ligated and spleen removed. Usual closure.

Twenty grains of quinine intramuscularly and three c. c. of haemoplastic serum were given on the table. As there was no anemia, transfusion was not done. The patient was rather severely shocked and had a stormy convalescence for the first few days. On the third day the blood showed one aestivo-autumnal parasite. Quinine was administered throughout. She left for her home on the fifteenth day in excellent condition.

The pathologist's report on the spleen is as follows:

"Spleen is five or six times its normal size and dark in color, the capsule being thickened and greatly congested, on cut surface the malpighian

bodies are well marked, the fibrous trabeculae are thickened, as is the reticulum of the pulp.

Stained sections show the specimen to be greatly congested, there is a rather active phagocytosis, the splenic pulp being greatly increased in amount and while malarial parasites are not found in the specimen, the changes are not unlike that of a "malarial spleen."

Diagnosis: Hyperplasia of spleen."

While cases of displaced spleen with twisted pedicle are not uncommon, they are still rare enough to be of interest. But the feature of this case, which impressed me as being extremely unusual, was the involvement of the pancreas, which was enormously displaced.

## CONGENITAL PYLORIC STENOSIS

RICHARD A. BARR, M.D., F.A.C.S., Nashville

I AM not one of those who take special interest in rare conditions, diseases that one will only see once, if at all, in a lifetime of practice, and particularly those diseases in which one can take only a curious or so-called scientific interest, because of their incurability.

There are conditions however, more or less curable, which though relatively rare, show up at intervals in any doctor's practice and which stand a good chance to be overlooked temporarily or entirely unless they are kept in mind and looked for in every case with suggestive symptoms.

In these conditions delay in recognition is often dangerous, even fatal, in its results, so it behooves us to be continually on the "qui vive" in order to recognize them early and institute the proper treatment as we see it. Such conditions, even though rare, command a real, not a curious interest.

Two of these relatively rare conditions, intussusception and congenital pyloric stenosis, occur in infants and are apt to escape early recognition because of the ease with which they may be confused with the ordinary digestive disturbances of babies.

The occurrence of congenital pyloric stenosis is not so unusual as its recognition. I am convinced of this because I have had a number of friends, who in thinking back over a few years of general practice, have been able to recall cases which, in the light of increased interest and information, they have been able to diagnose, post mortem, unfortunately. Either it has been more frequent in its occurrence in our Middle Tennessee section of very recent years, or our doctors are recognizing it more readily. I am inclined to believe that the former is the case, because it

has been found more often in the practice of men who have for years been very much interested in the subject and constantly looking out for cases.

According to Douglas, congenital pyloric stenosis was first described as such by Landerer in 1879. Green and Sidbury accredit priority to Hirschsprung in 1888. Holt gives Cordua credit for the first operation (jejunostomy) in 1893, which was not successful. The recent literature on the subject is largely surgical, and the number of reported cases that have been operated on has grown rapidly in the last five years.

The fact that Downes of New York has operated on and verified over 250 cases shows that the condition is not infrequently found when a watch is kept for it. Of course, Downes occupies a very strategic position at the Babies' Hospital, and his work is of exceptional volume, but as you probably noticed, Strauss of Chicago brought out in the discussion of Downes' paper, published in the *Journal of the A. M. A.*, of July 24, 1920, that he has treated 163 cases, 107 surgically, while many surgeons have series of twenty or more.

The pathology of the condition is still a matter of discussion. It was originally considered as pyloric spasm with consequent hypertrophy, and this theory is still held to by most. Whether or not spasm cuts a figure in the early stages there isn't the slightest reasonable ground, in my opinion, for thinking it a matter of importance after the case has gone to the stage of tumor formation. The tumor neither looks nor cuts nor acts like an hypertrophied and spasmodic muscle. It is much more on the connective tissue order, and the margins of an incision through it have no tendency to separate.

This matter of persistence of the spasm is of some importance, as it would certainly have a bearing on medical treatment. The very complete obstruction which sometimes comes up suddenly in cases that have been able to get a certain amount of food by is no doubt due to oedema of the mucus membrane rather than to spasm of the muscle—anti-spasmodics would have slight chance to be of benefit at this stage.

Apparently the tumor persists more or less indefinitely (fifty-five months in one case noted by Holt, tumor being seen and felt at operation for hernia) in cases cured by medicine or by gastro-enterostomy, but Downes reports that the pylorus appeared normal in two cases in which he secured post mortem following death from pneumonia one and one-half years after what he now calls the Fredet-Rammstedt operation, but which we will for brevity refer to as the Rammstedt.

Cases of congenital pyloric stenosis develop symptoms in the majority of instances in the first month of life (third week most frequent time), though cases at three, four and one-half and five years are reported. It is most frequent in breast-fed males. The symptoms and signs are entirely obstructive, either directly or indirectly. It has no special symptoms, for it is a mechanical condition, and it does not cause any changes whatever beyond more or less complete occlusion of the pylorus and a consequent varying degree of starvation.

Vomiting is the first symptom. This is uniformly persistent and forcible, but of varying frequency. Some patients vomit promptly after every feeding, others at longer intervals, possibly only once or twice in twenty-four hours. Gastric retention, scanty bowel movements (meconium only, no food residue in severe cases), diminished secretion of urine, loss of flesh, scaphoid lower abdomen, fullness of upper abdomen, visible gastric peristalsis, palpable epigastric tumor, and x-ray findings are the evidences on which a diagnosis may be easily made. Fever is incidental only. The pulse depends on the patient's general con-

dition. Acidosis may result from starvation.

The necessity and risk of x-ray investigation is variously estimated. Holt thinks it just as conclusive and decidedly safe to estimate the gastric retention. Strauss of Chicago, already quoted, insists on its value not only for diagnosis but also for deciding for or against surgical treatment. Unless from seventy to eighty per cent of the bismuth meal goes through in four hours he considers the case surgical. X-ray evidence is certainly conclusive and when this agency is used carefully it should be without serious danger. There is no reason for its use as a routine however. Vomiting, visible peristaltic waves and palpable tumor make a clear enough combination.

The condition of the patient shows the degree of starvation and so is sufficient index to amount of food getting by.

It is probably safe to say that a diagnosis of congenital pyloric stenosis is readily made in the great majority of instances, and that in any case the condition can hardly be completely missed, except by mere failure to look for it.

Downes lays great stress on finding the tumor, and one infers from his articles that he has always been able to feel it, his only mistakes being in two cases in which he felt a tumor that was not present. He advises emptying the stomach of gas and the use of light ethyl chloride anesthesia as aids to palpation. Other observers do not find the tumor so uniformly before operation. In its absence, of course x-ray is essential for definite diagnosis.

Starting with a diagnosis of congenital pyloric stenosis we come next to the question of treatment. There are unquestionably cases which do not require surgery, but as with acute appendicitis for instance, it is a difficult matter to select them.

It is largely a matter of whether the patient can be nourished or not. While cure of the hypertrophy and disappearance of the tumor is not required for successful medical treatment, any ground lost in trying it out greatly handicaps the surgeon. Of course the surgeon is anxious that medi-

cal care be not pushed to the point of leaving him a devitalized subject to work on.

The feeding of these cases after operation is a problem in itself, and post operative medical treatment is probably the best medical treatment for the great majority of cases. We will take this question up briefly again in discussing mortality.

Assuming that surgery has been agreed upon there are still some questions to be settled.

First is the question of anesthesia. Shall we use a local anesthesia or ether (chloroform is not to be considered). Bevan of Chicago and Haggard of Nashville are ardent advocates of local anesthesia. My own experience with it has been fairly satisfactory.

It is easy enough to make the incision in the belly wall under local anesthesia but a more difficult job in some cases, is to exert the necessary traction on some viscera and pressure on others, incident to any of the various operative procedures, without causing more shock than would be caused by ether. Local anesthesia is only worth while when we do a painless operation with its help. Just as with adults it is probably important, if not absolutely necessary, to give a full dose of opiate in connection with local anesthesia.

Another point in connection with local anesthesia is to make a short incision. Unless this precaution is taken any struggling or crying on the part of the patient causes a protrusion of viscera impossible to control. Strauss says the Rammstedt operation can be performed through an incision three-fourths to one inch long. The tumor is located by Strauss with one index finger introduced through this short incision and then brought out of the wound with a small fine ribbon shaped hook. Any presenting portion of the stomach should be seized. By working from this vantage point toward the pylorus the tumor can usually be brought into the wound.

Only cases with freely movable pylorus can be handled in this way, and especially under local anesthesia. In some cases it is necessary to go down to the tumor, as it will

not come up to you. Here a general anesthesia is probably obligatory, as will likely prove to be in case gastro-jejunostomy is done.

The Rammstedt operation or some modification of it is now almost universally employed. In the typical Rammstedt an incision is made in the tumor in the long axis of the gut through the serous and muscular coats down to the submucous layer. The muscle wound is then spread open, freeing a small area of mucus membrane. No effort is made to close or cover up this open wound, nor does there seem to be any good reason for trying to.

Smythe of Memphis has reported a case in which this procedure failed to relieve the obstruction, and he had to do a gastro-jejunostomy, which resulted in cure of the patient. On the other hand, Holt states that he has had sufficient observation of the Rammstedt operation to know that it does relieve the obstruction at once and completely. Downes, from observation of the same cases, says that the results are permanent and the cure complete.

Strauss, of Chicago, previously quoted, says that the Rammstedt as done by Downes, "does not release the obstruction sufficiently, and for this reason, the patient, following the operation, vomits for four or five days." He figures a mortality from this of from thirty to fifty per cent. His modification of the Rammstedt, which consists in peeling the cylinder of mucus membrane free from the muscular coat for some two-thirds or three-fourths of its circumference will, in his opinion, overcome this objection. He further splits the muscular coat to give more room, and to furnish a covering for the mucus membrane.

Strauss claims to have operated on 107 cases by this modification with only three deaths. He knows of another surgeon who has used his method in nineteen cases without a death, and still another who has used it in twenty-three cases with only one death. Strauss further states that twenty-four of his cases were in a "moribund" condition when operated on, and only one of those died.

From all this we may infer that a special Providence presides over the work of the surgeon using Strauss' modified Rammstedt method.

Lewisohn (in S. G. & O., Vol. 26, 1918) quotes the combined statistics of Scudder, Stillman and Richter, giving thirty-six gastro-enterostomies with thirteen per cent mortality, and rather leans to this procedure instead of the Rammstedt. Out of eight Rammstedts reported by him done at Mt. Siai hospital, the duodenum was accidentally opened in three and in the hands of three different surgeons. This matter of opening into the duodenum is the greatest technical risk about the Rammstedt.

All the coats of the duodenum are relatively thin and the line of cleavage between the muscular and submucous coats is poorly marked compared to the stomach. The duodenal end of the incision through the tumor must be completed last and with great care. It is well enough to tear rather than cut the deepest fibres through the whole length of the incision, using the handle of a scalpel or a small periosteal elevator. No doubt fear of going through the duodenal mucosa has caused surgeons to fail to make division of all circular fibres, and so has caused failure to relieve the obstruction.

The risk of opening the bowel belongs justly to the operation, but failure to divide the fibres does not prove that a properly done Rammstedt will not give prompt and permanent relief of the obstruction. I believe that it will, and I further believe that all modifications of this operation in the way of peeling out the mucosa, trying to make a muscular or peritoneal closure over it, use of omental plug, etc., are meddling tinkering.

There is a real danger from hemorrhage in these cases, and all bleeding from the incision in the tumor should be stopped before the abdominal incision is closed. For this purpose very fine needles and silk thread should be used. Catgut needles and sutures are too bulky and cut or tear. The sutures with needles attached, put up for blood vessel sutures, are about right.

The tumor as I have seen it is so rigid

and so friable that any suggestion to split it for flap formation strikes me as absurd. The tumor is so stiff that the cut edges of the incision have to be forced apart to give access to the deeper layers, and to make provision for careful inspection.

The mortality of the Rammstedt operation has already been referred to. Downes' general mortality is seventeen and one-tenth per cent, though he only lost one of fifty-one cases of breast fed infants coming to operation with a weight loss of less than twenty per cent.

Other operators claim a general mortality of three to five per cent. This is too low an estimate unless patients are gotten very early, and have the best and most careful post-operative medical care.

It is useless to compare medical and surgical results, though the comparison favors surgery. The best and the worst cases are not operated on where any selection is made. Surgery is imperative in the majority of cases, and I do not believe that any time or any of the patient's strength should be lost in trying out medical treatment. Unless it is promptly made evident that the patient is able to hold his ground in matters of flesh and strength, surgical measures should be instituted.

No one could, in my opinion, be considered very radical for advising operation in *every* case in which definite diagnosis is made. Some cases would be operated on which might get by without it, but the general mortality would be lowered, and that is the real basis for formulating plans of treatment.

The post-operative treatment is a matter of great importance and is of course largely a matter of supplying water and food. The average surgeon has little or no experience in infant feeding, and all these cases should have the best available pediatrician in charge after operation, if not before. With adult we play things safe, and starve the patient until we know he is ready for food. Infants are said not to stand starvation and the usual plan of post-operative treatment for adults would prove theoretically disastrous. My observation

has been that babies stand starvation excellently well, and are usually given a chance to show their resistance before operation. They should stand it equally well after operation, and efforts at feeding which merely result in prolonging starva-

tion are ill advised. The pediatrician should wait twenty-four or preferably forty-eight hours before starting feeding. If this starvation period can be subtracted from that gone through before operation it will be all the better.

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## WOUNDS OF THE THORAX\*

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MURRAY B. DAVIS, M.D., Nashville.

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HAVING been impressed from observing a number of cases of penetrating gunshot and stab wounds of the thorax, by their lack of complications and shortness of time in the hospital, I have gone over the records of thirty-four such cases observed at the Nashville General Hospital by me, in the hope that some helpful information might be gained as to the management and immediate end-results of this type of case.

Chest wounds are not so dangerous as might be expected, as has been shown by countless cases in the last war. Many cases of bullet wounds of the lungs, not complicated by injury to the ribs or large pulmonary vessels, heal rapidly and alarming hemorrhage into the pleural cavity is very rare; generally little blood is lost this way.

For the sake of convenience, I have classified these cases into three groups:

Group 1. Penetrating wounds with little or no complication.

Group 2. Penetrating wounds complicated by intra-abdominal pathology.

Group 3. Penetrating wounds complicated by hemothorax.

Group 1. *Penetrating Wounds With Little or No Complication.*—In this type of case, I mean by little or no complication, that the complications which developed

were of such a nature that it was not deemed necessary to resort to any interference. A few of these cases, it is true, had their thoracic wounds complicated by fractures, and so forth, in other parts of the body, received at the same time. But, in this series, I am dealing only with the thoracic injuries and disregarding the others.

There were twenty-nine of this type of case, with one death; a mortality of about three and one-half per cent.

Traumatic wounds of the thorax, in a great many instances, have marked muscular abdominal rigidity, so marked, in fact, that it stimulates rigidity of perforated gastric or duodenal ulcers, and oftentimes makes one wonder if one is not overlooking some intra-abdominal trouble. The differential diagnosis between intra-thoracic and intra-peritoneal conditions is in some cases very difficult, as is seen by pneumonia being operated for appendicitis.

Vale of Detroit says when the lesion is intra-thoracic, the rigidity of the abdomen relaxes at the end of expiration. This is typical, and is not present at any other point in the respiratory excursion. When the lesion is intra-peritoneal, the rigidity is usually constant, but, if intermittent, it is not regularly so, as in the chest condition. This abdominal rigidity was present in a little more than one-third of these cases, and was puzzling, especially so where the

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\*Read before Middle Tennessee Medical Association at Lewisburg.

wound was situated low on the thorax and might have involved the diaphragm.

*Case 1.* J. C. White, age 19, was brought to the hospital September 3, 1922, with an incised wound in the seventh interspace at the mid-axillary line. He was bleeding profusely and the wound bubbling with each excursion of the chest. The abdomen had board-like rigidity, more marked on the left side, but apparently softened up at the end of expiration. The wound was sutured tightly and the left chest immobilized with adhesive straps. The patient was put to bed and morphine given.

September 4, 1922. Abdominal rigidity decreased markedly. No tenderness on palpation. Patient breathing better. No pain except on deep respiration.

September 8, 1922. Discharged as improved, to be under care of family physician.

I report this case to show how confusing abdominal symptoms may be.

Patients of this group remained in the hospital anywhere from two to twelve days, or an average of six and two-thirds days. Their symptoms varied from cough, pain on respiration, hemoptysis of varying degree, dyspnea, cardiac displacement, and shock, on down to no symptoms whatever; in fact, it was of interest to note just how little discomfort some of these patients experienced from penetrating wounds of the thorax. Their wounds were sterilized, as well as possible, with iodine, the bleeding points, if any, of the thoracic wall controlled, and the wounds sutured snugly, an effort being made to approximate the parietal pleura, if possible. The thorax was then partially immobilized with adhesive straps or chest binders. The majority of them began to breathe better as soon as the wounds were closed. Subcutaneous emphysema was noted in four of these cases, but no effort was made to interfere with it, as it was not considered a serious complication. The air was gradually absorbed.

*Group 2. Penetrating Wounds Complicated by Intra-abdominal Pathology.*—These are indeed desperate cases, and are

those in which early surgery is demanded. We had three of this type of injury, with one recovery. The two that terminated fatally were gunshot wounds of the abdomen and thorax, the tracks of the bullets touching both cavities. The one that recovered had multiple stab wounds of the thorax and abdomen, producing a bilateral pneumo-thorax. The wounds of the thorax were first repaired, and then the abdomen opened and dealt with.

In cases in which we cannot arrive at a diagnosis quickly, but have reason to believe that the diaphragm has been injured, and probably the abdominal viscera, I believe it is the surgeon's duty to do an exploratory operation as early as possible. I know of no other condition in which sound judgment is more required—on the one hand, you do not wish to add more shock to your patient, and yet on the other you cannot afford to sit idly by with a perforated abdominal viscera.

*Group 3. Penetrating Wounds Complicated by Hemo-thorax.*—Hemo-thorax is the most common result of chest wounds; both pneumo-thorax, and pneumo-hemo-thorax are relatively rare. Bradford, in a review of 328 cases says if the amount of bloody effusion is small there is no need of any special, active treatment. If the effusion is at all large in amount, that is, the dullness reaching to the angle of the scapula, the fluid should be removed, by aspiration, at the end of the first week. However, in some cases, earlier aspiration may be necessary to relieve distress arising mechanically from the amount of the fluid. Hemo-thorax was present, in varying degrees, in practically all of our cases, but in one instance only was it deemed necessary to aspirate.

*Case 2.* L. H., white, age 16. Brought to hospital March 27, 1922, with stab wound of the right chest, in sixth interspace near the nipple line. Nothing unusual was noted. Was discharged three days later with normal physical findings. The following day he was seized with a fit of coughing and brought back to the hospital with fast pulse, marked dyspnea and

physical signs of fluid in the right chest. Over one quart of bloody fluid was aspirated. Symptoms of distress cleared up. Was put on treatment to give him absolute rest and increase his coagulation time. Symptoms partially returned again the next day, when he was again aspirated, after which time he had no further trouble. Was kept in the hospital twelve days and discharged to his family doctor; x-ray showing the fluid in the chest to be almost cleared up.

It is much better to do an aspiration with replacement of the amount aspirated with oxygen or even air than simple aspiration, as a partial collapse of the lung will have a tendency to control the hemorrhage, and if the pulmonary hemorrhage is persistent, I believe that a complete artificial pneumo-thorax, with a collapse of the lung, should be established on that side.

A hemo-thorax makes an ideal culture media, and as soon as signs of infection show up, a thoractomy with drainage should be performed. In practically all of these cases with a hemo-thorax of any size, I noticed there was a rise of temperature on the second or third day, probably from protein absorption, which promptly subsided, and in no case did any symptoms of infection show up. This is especially interesting when we remember that everything from pistol bullets to rusty pocket knives and ice-picks were used to inflict these

wounds. It seems that the pleura and lungs are very resistant to infection.

*Principles Underlying Treatment.*—The treatment is expectant, unless infection, hemorrhage, or respiratory embarrassment threaten life. The wounds should be sterilized and sutured, an effort being made to approximate the parietal pleura, enlarging the external wound, if necessary, to do so. Immobilize the chest with adhesive or binders, and place patient in a position of greatest comfort and ease of respiration.

Morphia quiets dyspnea, and the hemostatic vaso-constrictors, ergot, etc., are indicated.

Shock should be treated by heat and stimulants, and if severe, intravenous saline or hypodermoclysis.

Aspiration may be necessary, either in pneumo-thorax or hemo-thorax, if respiration is seriously embarrassed.

The indications for operation are:

1. Ragged wounds of soft parts, with fracture of the ribs.
2. A sucking wound of the pleura and especially one that has a valve-like action that allows the air to be sucked in, and prevents its expulsion.
3. Large hemo-thorax, which cannot be evacuated by aspiration.
4. Retention of a large foreign body in an accessible position.
5. Large internal hemorrhage.
6. Infection in the pleura, or empyema.

## STATISTICAL REPORT OF GALL-BLADDER DISEASE AT ST. THOMAS HOSPITAL

H. D. PETERS, M.D., Resident, Nashville.

**N**<sup>O</sup> chapter in medicine is broader or more interesting than that of the diseases of the gall-bladder. Of equal importance, both to the surgeon and medical man, and presenting as it does a wide field for study, the gall-bladder has become a most fertile soil for speculation. So in recent years much has been written about the gall-bladder and many statistics have been compiled. It is our purpose to review in a brief manner 370 cases of gall-bladder diseases treated in this hospital from January, 1921, to December, 1924.

*Age of Patients.*—The dictum of "fair, fat and forty" has held true in our series. In reports made by Mayos, Moynihan, Mayo Robson and Murphy, the average age of the gall-bladder patient was forty-five years. The average age of our hospital series was forty-four years and three months. Of these the female suffered earlier, their age being forty-three years, while that of the male was forty-five years and six months. The majority of the patients were over forty years of age, with the most common years being forty to fifty-five. The oldest was a female, a medical case, seventy-seven years of age, while the youngest was a boy of sixteen, a surgical case with stones, upon whom a successful cholecystectomy was performed. This age is relatively uncommon, though cases of stones in the newborn have been reported in literature.

*Sex.*—Textbooks state that the relative frequency of gall-bladder disease is three to one in females, probably due to their inactive life, to constipation, child-bearing, etc. In our series of gall-bladder disease, 77.74 per cent occurred in females and 22.26 per cent in males, same being approximately three and one-half to one.

*Pathological Grouping.*—Of the 370 cases

reported, 150, or forty per cent, had stones. Of these 150 cases, there were thirteen deaths, a mortality of 8.6 per cent.

Eighteen cases of empyema were reported. This is 4.8 per cent of all cases. There were two deaths in this particular series, giving a mortality of eleven per cent for empyema.

In our series there were six cases of cancer. Mayo states that cancer of the gall-bladder and ducts was found in four per cent of his series, with three out of each four being in the gall-bladder, and over ninety per cent containing stones. Four of our cases were found to have stones. One was definitely reported as being primary in the gall-bladder, while five involved the pancreas also. Not one of these cases died in the hospital, and no attempt was made to trace them.

Of 196 cases of cholecystitis, six died. This is a mortality of 3.06 per cent, and is comparatively low, Mayo's mortality being 2.57 per cent for uncomplicated cases.

*Operations.*—The total number of operative cases was 281, the most popular type being the cholecystectomy, as evidenced by the fact that this procedure was used in 242 cases. Of these, seventeen died—a mortality of 7.06 per cent.

Thirty-one cases were operated by cholecystotomy, with three deaths. This gives a mortality of 9.67 per cent. On first consideration this might seem high for cholecystotomy, but when we remember that some of the most desperate cases were dealt with in this way, the mortality approaches more nearly to the normal.

Six choledocotomies have been performed, of which two died, giving a mortality of 33.33 per cent. Two cases had both cholecystectomy and choledocotomy.

One of these patients died. This particular phase of the report is questioned, for we feel sure more work than this has been done on the common duct.

*Annual Report*—Total number of cases: 1921, 120, with seven deaths and a mortality of 5.83 per cent; 1922, seventy-eight, with three deaths and a mortality of 3.9 per cent; 1923, eighty-six, with three deaths and a mortality of 3.5 per cent; 1924 (to date), eighty-one, with eleven deaths and a mortality of 13.6 per cent. From this we see that the mortality for 1924 is much higher than any previous year.

*Medical Cases*—Eighty-three cases have been admitted, either for diagnosis or medical treatment, or refused operation after admission. These have all been grouped as medical cases. Of this number one died, giving a mortality of 1.2 per cent. No attempt has been made to trace these patients.

*Operative Resume*—The total number of operations of all kinds for the entire period was 281. Of this number twenty-three died, a mortality of 8.18 per cent.

*Surgico-Medical Resume*—In the light of

the preceding statistics one might well ask something more general after all. The information desired is, what chance does the gall-bladder patient have at St. Thomas Hospital? Not at Mayo's, but right here? The answer is that our mortality for all cases entered, both surgical and medical, is 6.48 per cent.

After careful study of the types of patients admitted we feel that our mortality rate compares favorably with that from any section of the country.

|   |               |
|---|---------------|
| Total cases                               | 370           |
| Average age, 44 years, 3 months.          |               |
| Total males                               | 82 or 22.26%  |
| Average age, 45 years, 6 months.          |               |
| Total females                             | 288 or 77.74% |
| Average age, 43 years.                    |               |
| Oldest patient                            | 77 years      |
| Youngest patient                          | 16 years      |
| Total operation, 281; deaths              | 23 or 8.18%   |
| Total "ectomys," 242; deaths              | 17 or 7.06%   |
| Total "otomys," 31; deaths                | 3 or 9.67%    |
| Total "docotomys," 6; deaths              | 2 or 33.33%   |
| Total ectomys plus docotomys, 2; deaths   | 1 or 50%      |
| Total medical cases, 83; deaths           | 1 or 1.2%     |
| Total mortality, surgical and medical     | 6.48%         |
| Total operations for 1921, 120; deaths, 7 | or 5.83%      |
| Total operations for 1922, 78; deaths, 3  | or 3.9%       |
| Total operations for 1923, 86; deaths, 3  | or 3.5%       |
| Total operations for 1924, 81; deaths, 11 | or 13.6%      |

## ACUTE SINUSITIS\*

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W. W. WILKERSON, M.D., Nashville.

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**I**N discussing, in a short space of time, any condition which involves several structures, though intimately connected, the statements have to be, to some extent, general.

The frontal sinuses lie between the inner and outer table of the skull, just above the eyes. The weakest point, in the external, is just above the inner canthus of the eye. so when a fistula forms from the frontal sinus, it is at this point. The frontal sinuses drain into the nose through the infundibulum, which is surrounded by the anterior ethmoid cells.

It is around the bulla ethmoidalis that the anterior group of ethmoid cells is found. The posterior group empties into the superior meatus and is located just anterior to the sphenoids.

The sphenoids are located in the sphenoid bone. They drain into the superior meatus and their orifices are situated opposite the posterior part of the superior turbinate.

The maxillary sinuses are located beneath the eyes and drain into the hiatus semilunaris. Its drainage is quite insufficient. The roots of the first and second molars, premolars and canine teeth often project into them.

These sinuses are lined with ciliated columnar epithelium, and, as is the case in all sinuses, the cilia move toward the ostium, which greatly aids in the removal of the normal secretion. Therefore anything which prevents or hinders the cilia movement is the direct cause of sinusitis. This, the first step in sinusitis, is caused by changes in the mucous membrane. These changes may be due to several things, but the most common cause is inflammation fol-

lowing colds. Normal secretion is now dammed back and pus soon forms. The cilia become motionless, and the sinus remains partially filled with pus at all times, until removed by artificial means.

The offending organisms are usually the catarrhal organisms and the influenza bacillus, but after a few years these have disappeared and we have in their stead staphylococci, streptococci and pneumococci. The pneumococci remain active for the longest period of time and are thought to do the most damage. These organisms are of nasal origin and do not cause the fetid odor that is caused by anerobic bacteria coming from the teeth.

Among the acute infectious diseases which cause empyema of the sinuses, either primarily or secondarily, are coryza, influenza, bronchitis, pneumonia, smallpox, scarlet fever, meningitis, diphtheria and erysipelas. I have seen a few cases following mumps and one case following gonorrhea. Those having rheumatism, peritonitis, mercurial or phosphorus poisoning, according to Thomson, are more prone to have this condition. It has been our observation, also, that this disease is more common in those cases in which the tonsils and adenoids are present. Foreign bodies, new growths, diseased teeth, fractures, syphilis—by causing necrosis, packing the nares, nasal douches, swimming, and the common practice of drawing water up into the nose when washing are very prone to cause this, especially the last. Deviated septa play an important part also, as they prevent free drainage normally in many cases.

The symptoms of sinusitis must be divided into two groups, local and constitutional.

The first complaint in the first group is a

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\*Read at the meeting of the West Tennessee Medical and Surgical Association held at Jackson, Tennessee, May 23, 24, 1924.

stuffy nose. Ethmoid involvement is prone to cause greater discomfort here than any of the other sinuses, and the sphenoids less. The patient will have more discharge than usual, which in some cases is very irritative.

It has been my experience that acute cases have a dull, usually non-throbbing headache at all times, although Ridpath states that maxillary sinusitis cases have headaches about one a.m., while frontal cases complain mainly at night. The tendency, of course, is such in both cases, but not definitely so. The headaches, though usually very severe, vary somewhat, depending upon which sinus is involved. Various textbooks localize these headaches according to the sinus involved, but since these headaches are not only due to pressure, but also to toxemia, I have found them to be either general or frontal in character, accompanied usually by some facial neuralgia. Sinusitis must, therefore, be differentiated from that condition.

Maxillary sinusitis usually causes pain and discomfort of the upper teeth. Here again a differentiation must be made. In frontal sinusitis there is a tender point just above the inner canthus of the eye and also pain in this region on blowing the nose.

Sphenoiditis may cause any or all of the following symptoms, since it is very close to the base of the brain, and the optic nerves, and the third, fourth, fifth and sixth cranial nerves run through the sphenoid fissure. The symptoms are: forgetfulness, drowsiness, double vision, loss of vision, pain behind the eyes, and possibly at times pain in the region of the ear. I have seen five cases of optic neuritis, where the vision had suddenly decreased to the counting of fingers, improved to approximately twenty-fiftieths in twenty-four hours following the removal of the middle turbinate and opening of the sphenoids. Two of these cases had pus in the sphenoids and ethmoids, while the other three showed no purulent secretion. Ethmoiditis sometimes causes iritis and painful eye movements.

The constitutional symptoms are often

quite severe. The disease may be ushered in with a pronounced chill, aching of the back and limbs, marked anorexia and insomnia, along with a rise in temperature—100 to 102, higher usually in children and sphenoid involvement. While albuminuria is uncommon, acetonuria is not the exception. There is always a general depression. The cases following a prolonged coryza do not show these marked symptoms. None of these symptoms, either local or constitutional, can be applied to any definite sinusitis, but I have tried to give you the most common complaints in each sinus infection. I shall not repeat these symptoms in relation to the diagnosis, but they must be borne in mind.

#### DIAGNOSIS.

As a rule sinusitis is not difficult to differentiate from other conditions, but in certain cases it is difficult to determine which sinus, or sinuses, are involved. In these cases I have adopted the following routine:

It is my custom to spray the nose with cocaine (two per cent), and while that is acting I transilluminate the sinuses. Transillumination is not of great value in bilateral sinus disease, as we need a normal sinus with which to compare the diseased side. Also, unless we have had an x-ray examination, we do not know the size of the frontal sinuses, as they vary in every case. Therefore, here again, transillumination is of small value. However, if we use transillumination as it is intended in conjunction with the x-ray, it is of great value. Let me add that any and every case of sinusitis worth treating is worth an x-ray examination.

Mentally noting our transillumination results, we return to our examination. We note if any pus is present in the nares, and where. We now wash the nares thoroughly with sterile saline. Pus in the nares immediately after this irrigation gives us a good clue as to which sinus is involved, as the pus hasn't had time to run all over the turbinates and floor. If pus is between the middle turbinate and septum, usually the sphenoid or posterior ethmoid is involved. If the pus is located just beneath

the middle turbinate and between it and the inferior turbinate, we should suspect that either the frontal, anterior ethmoid, or maxillary sinus is involved. This is a good time to use a probe in the nose to see if any foreign bodies are present and also to determine the character of the tissues. Before going further, it is well to review our x-ray plates and see which sinus, or sinuses, are cloudy, remembering that an old inflammation of a sinus that has been healed casts the same shadow as an acute infection.

If the posterior group is suspected we irrigate the sphenoid. If no pus is obtained it is not ruled out, but should be washed again the next day, for we may obtain pus at the second sitting. The posterior ethmoid is involved only when the sphenoid is infected.

If the anterior group is suspected, we begin by irrigating the maxillary sinus, as it is the easiest to approach and the most often involved. After making sure that it isn't involved, by several washings if necessary, we must suspect that the frontal is primarily affected, for, as we have said before, ethmoidal involvement is usually secondary. In this type of infection we would irrigate the frontal to complete our diagnosis.

There is another group of more acute cases that by remembering the symptoms one can easily diagnose. Experience, of course, plays a very prominent part in all of this work.

There is still another group of cases that complain of moderate symptoms, but have no discharge except early in the morning. Have these cases come to you in the morning before blowing their noses, and examine carefully, using the routine which I have previously explained in detail.

We have one other aid in diagnosing these conditions, and that is a nasopharyngoscope. This instrument works on the same principle as the submarine periscope, and is illuminated by a small electric bulb. We introduce this into the nose, and carefully search for small amounts of pus which cannot be seen from the outside. I might add that occasionally when both the

x-ray and transillumination fail to lead us to suspect an infection of the sinuses we may find pus present on irrigation.

#### TREATMENT.

The treatment of each case varies, not only as to the pathology present but also as to the doctor in charge. As many modes of treatment give good results, we must realize that each has both advantages and disadvantages. Practically all of them accomplish good results in the hands of competent men. While I shall give my plan of treatment, I do so with no view of criticizing those who treat similar conditions differently.

It is the aim in all plans of treatment to establish ventilation and free drainage of the sinuses, to give the vaso-motor system more tonicity, and to stimulate the reaction which increases the leucocytes and other protective agents. In all cases we should be very conservative in our treatment, never operating unless we can accomplish some very definite purpose that cannot be accomplished in any other manner. Let me emphasize this point by saying that I would rather treat a case daily for a year than to operate and destroy the nasal mucous membrane, which type will never regenerate, nor can we expect anything to compensate for its loss.

In all sinusitis we keep the turbinates shrunk down with adrenalin or cocaine spray or a combination of the two, followed by a nasal irrigation with warm saline three times a day, after which we advise the use of an oil spray. Heat in any form gives some relief and aids the reaction. Internally, we promote elimination, give atrophine to lessen secretion, and whatever is required to make the pain bearable.

The frontal sinus, when acutely inflamed, is the most difficult and also the most dangerous of the sinuses to treat. We never irrigate an acute frontal until the symptoms begin to subside, as there might be a necrotic area in the inner plate of the skull. Irrigation in such a case would be the forerunner of meningitis, and it is practically always fatal when originating here. If the middle turbinate is such that re-

ardless of treatment free drainage is not established, we remove its anterior tip by cutting it off clean. If the infection gets worse, causing eye symptoms, we operate externally, doing as little as necessary to obtain drainage. After the acute stage subsides we irrigate the frontal sinus daily with warm saline, through a cannula passed into it, until all of the secretion has ceased.

In acute infections of the ethmoids we usually find that they are associated with other sinus infections, which when cured cause the ethmoidal involvement to cease.

The sphenoid, when involved, requires daily irrigations through a cannula until all secretion has stopped. It is usually safer to remove its anterior plate to prevent complications.

In acute maxillary sinusitis we begin irrigating the sinus immediately, through a Coakley trocar and cannula introduced into the sinus cavity through the nasal route. If after irrigating it daily for six weeks, it fails to show improvement, we make a large opening into it from the nasal cavity on a level with its floor. While this allows the pus to drain at all times, we continue, or have the patient continue, this sinus irrigation until it clears up.

In closing, let me say that sinusitis is very hard to diagnose, also to locate at times, and is very obstinate toward treatment, so the physician should not be criticized too severely if results are slow to come.

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JANUARY, 1925

**EDITORIAL**

The following letter has been addressed to the members of the House and Senate of the General Assembly of the State, which is now in session:

To the Honorable Members of the House and Senate of the Sixty-fourth General Assembly of Tennessee: We represent the profession of medicine of Tennessee in asking your favorable consideration of two measures.

One is an amendment to the medical section of the Workmen's Compensation Law (Chapter 123, Public Acts 1919).

The other is an amendment to the Medicine Practice Act (Chapter 78, Public Acts 1901).

The Medical Practice Act is deficient in the following particulars:

First—It fails to provide for notice and hearing before a license to practice can be revoked.

Second—The word "moral turpitude" is not clearly defined in the Act.

Third—The penalty for violations is inadequate for the purpose (it provides a fine of from ten to twenty-five dollars).

The amendment we propose is designed to correct these three defects—by providing for notice and hearing before a license can be revoked; by defining the meaning of the term "moral turpitude;" and by increasing the penalty to a limit of five hundred dollars and imprisonment in the discretion of the court.

Compensation Law—We seek to amend the medical section of the Workmen's Compensation Law in one particular. The law at present gives to the employer, or insurance company as the case may be, the power

to select the physician an injured workman must accept. Most employers carry liability insurance, and this power to make selection is, therefore, as a rule, vested in an insurance company.

The amendment we propose provides that the injured man may select the physician who treats him.

The profession of medicine has always stood by the principle of liberty in medicine. We believe a man should have the right to choose his physician. The profession, it is true, has stood for high standards of qualification. To this end laws regulating the practice of medicine have been placed upon the statute books and boards of examiners have been set up to pass upon the qualifications of those desiring to enter upon the practice. When a man has complied with the requirements of law we believe he should be free to do service for any man who wishes his service.

We have never asked that a board of doctors be set up and empowered to determine for any member of society which doctor he shall accept under any set of circumstances. We are opposed to such powers being vested in any man or board, regardless of whether the board be composed of doctors or laymen—employers or employees.

These principles are traditional in medicine in this country. These are the principles of liberty that have made the profession of medicine in this country great. They are the principles that have made our country as a whole great. The Compensation Law as it stands today violates these principles in that it deprives the man of his liberty to choose his physician and deprives the physician of his right to serve those who desire his services.

The duties of a doctor in attending upon a man under the Compensation Law are two-fold. First, his duty is to treat the injury. Second, it is made his duty to state the character and extent of the injury and make an estimate of the degree of total disability that may result from the injury. Upon this information the amount due the employee is determined. In

case the injury is of such a character as to cause the loss of a member, such as an eye, a finger, a hand, or a foot, the appraisal of the damage is simple and easy. In fact, it is set out in the law. But in case the injury is concealed, as many injuries are, the matter of making an appraisal is decidedly more difficult.

It is reasonable to assume that a doctor employed by an insurance company to attend an injured man may be biased in his judgment of the extent of injury. It is certainly not unreasonable to assume that such a doctor may be biased in favor of his insurance company to the extent of giving a biased statement as to the degree of injury and disability the man has. That this statement is true we have reference to cases of records in the Department of State, which will be submitted to anyone desiring them.

As the law now reads, the employee may have a physician of his choice call and see him at his own expense, but a physician so called is not allowed to treat him.

We are not opposed to the employer being protected. To the contrary, the same provisions which protect the employer under the present law will protect him with our amendment in force. The employer is protected against extortion in fees by a limit to his liability for hospital fees, crutches, medicine, apparatus, and doctor's fee to one hundred dollars. He is also protected by a provision in the amendment we propose which gives him the right to send a physician of his choice to examine the injured employee at any reasonable time. This provision would protect him against faking of any sort upon the part of the employee. Certainly no one could in reason ask for more protection than these provisions afford.

It might be apropos to ask this question: "Who has the most at stake, the employer or the employee?" The employer has at stake a small sum of money at most. The employee has at stake his life, his future, with all that means to him and his dependents. Could it be said in reason that the employer has the greater interest at stake,

that would entitle him to exercise such powers as the selection of the physician an injured employee must accept.

There are many insurance companies in Tennessee which write disability insurance. Do you suppose they would sell any policies if they carried the provision that the weekly benefit would not be paid unless a physician chosen by the insurance company should certify as to the disability of the policyholder? These companies do business and pay benefits with the statements of the physician chosen by the policyholder as the basis for such settlements. We would call your attention that instances of fraudulent statements by physicians are exceedingly rare. Why, then, should liability insurance companies be given such powers? Under the very shade of the capitol building are insurance companies which are successful, and the basis of their settlements with policyholders for disability are the statements of the physicians in attendance upon the policyholders.

It is often said that the man who pays the doctor's bill should choose the doctor. We would call to your attention the fact that this is not the case of one man giving something to another. An employer has certain liabilities toward his employees under common law. Employees have the right to look to their employers for damages in the event of injury in the line of duty. So this is not a case of one man giving to another a service which would entitle him to the right to dictate the type of service and the personnel of those engaged in rendering service. The medical service rendered to employees under the compensation law is not a gift from his employer or insurance company.

We would make it clear that we, as doctors, are not concerned with the disputes between employers and employees—between capital and labor. We are, unfortunately, the third group of citizens affected by this law. A traditional principle of medicine is affected by it. In fact, the freedom of medicine is destroyed, insofar as this particular work is concerned, and the freedom of a man is destroyed, inso-

far as his right to choose a doctor is concerned.

The amendment we propose is neither radical nor new. Such conservative states as Ohio and Massachusetts give to the employee complete liberty to choose the physician who shall attend him. These states certainly are successful, conservative, industrial states. Industry is in no way threatened by these provisions.

The burden of binding up the wound of mankind falls upon the shoulders of the profession of medicine, regardless of whether the wounds are inflicted in war or the pursuits of peace—regardless of whether the remuneration is great or small. We accept the burden, but we ask for freedom.

The law in effect in Tennessee was enacted early in the year 1919, when a large per cent of the doctors in Tennessee were in the uniform of their country, doing their bit that liberty might be preserved here and elsewhere. They returned from service to find some of their own liberties taken from them. Was that fair?

Most respectfully submitted,

THE LEGISLATIVE COMMITTEE OF THE TENNESSEE STATE MEDICAL ASSOCIATION,

By H. H. Shoulders, Chairman.

P. S. For the convenience of comparison we herewith attach a copy of Section 25 of the law as it now reads, and in addition a copy of the section as it will read with the amendment we propose in force.

H. H. S.

#### MEDICAL AND HOSPITAL PROVISIONS OF WORKMAN'S COMPENSATION LAW NOW IN FORCE.

(Note that "Employer" includes the Employer's Insurance Company.) All Provisions Affected by Proposed Amendment Are in Capitals.

Sec. 2. *Be it further enacted*, That in this Act, unless the context otherwise requires:

(a) "Employer" shall include any individual, firm, association, or corporation, or the receiver, or trustee of the same, or the legal representatives of a deceased employer, using the service of not less than ten persons for pay. If the employer is in-

sured, it shall include his insurer, unless otherwise herein provided.

Sec. 25. (Paragraph 1.) *Be it further enacted*, That during the thirty days after the notice required by Section 23 of this Act to be given the employer or his agent, the employer shall furnish free of charge to the injured employee such medical and surgical treatment, medicine, medical and surgical supplies, crutches and apparatus as may be reasonably required, and the injured employee shall accept the same; and at the option of the employer he may furnish the same free of charge to the injured employee for such length of time after the expiration of the thirty days as the employer may elect, and the employee shall accept the same. *Provided, however*, that the total liability of the employer under this section shall not exceed one hundred dollars, and, *provided further*, that the pecuniary liability of the employer for such services rendered the employee shall be limited to such charges as prevail for similar treatment in the community where the injured employee resides. All cases of dispute as to the value of such services shall be determined by the tribunal having jurisdiction of the claim of the injured employee for compensation.

Par. 2. In case death results from the injury, the employer shall, in addition to the medical service, etc., referred to above, pay the burial expenses of the deceased employee, not exceeding one hundred dollars. If the deceased employee leaves no dependents entitled to claim compensation under the provisions of this Act, the employer shall not be further liable to anyone for compensation on account of the accident except for the medical service and burial expense herein provided for.

Par. 3. The injured employee must submit himself to the examination by the employer's physician at all reasonable times if requested to do so by the employer, but the employee shall have the right to have his own physician present at such examination, IN WHICH CASE THE EMPLOYEE SHALL BE LIABLE TO SUCH PHYSICIAN FOR HIS SERVICES. The em-

ployer shall pay for the services of the physician making the examination at the instance of the employer. And in case of dispute as to the injury, the court may, at the instance of either party or on its own motion, appoint a neutral physician of good standing and ability to make an examination of the injured person and report his findings to the court, the expense of which examination shall be borne equally by the parties. If the injured employee refuses to comply with any reasonable request for examination, or refuses to accept the medical service WHICH THE EMPLOYER IS REQUIRED TO FURNISH UNDER THE PROVISIONS OF THIS ACT, his right to compensation shall be suspended and no compensation shall be due and payable while he continues such refusal.

Par. 4. In all death claims where the cause of death is obscure or is disputed, any interested party may require an autopsy, the cost of which to be borne by the party demanding the same.

Par. 5. Any physician whose services are furnished or paid for by the employer and who treats or makes or is present at any examination of an injured employee may be required to testify as to any knowledge acquired by him in the course of such treatment or examination as same relates to the injury or disability arising therefrom.

Par. 6. IF IN AN EMERGENCY OR ON ACCOUNT OF THE EMPLOYER'S FAILURE OR REFUSAL TO PROVIDE THE MEDICAL CARE AND SERVICE REQUIRED BY THIS ACT, THE INJURED EMPLOYEE OR HIS DEPENDENTS MAY PROVIDE THE SAME, AND THE COST THEREOF, NOT EXCEEDING ONE HUNDRED DOLARS, SHALL BE BORNE BY THE EMPLOYER; *provided*, that the pecuniary liability of such employer shall be limited to the charges for such service as prevail in the community where the services are rendered. All cases of dispute as to the value of such services shall be determined by the tribunal having jurisdiction of the matter of compensation to the employee.

## THE PROVISIONS OF THE LAW WITH OUR PROPOSED AMENDMENTS INCLUDED.

(All changes are in capitals.)

Section 2. No change.

Section 25. Changes.

Paragraph 1. No change.

Paragraph 2. No change.

Paragraph 3. The injured employee must submit himself to the examination by the employer's physician at all reasonable times if requested to do so by the employer, but the employee shall have the right to have his own physician present at such examination. (WORDS OMITTED.) The employer shall pay for the services of the physician making the examination at the instance of the employer. And in case of dispute as to the injury, the court may, at the instance of either party or on its own motion, appoint a neutral physician of good standing and ability to make an examination of the injured person and report his findings to the court, the expense of which examination shall be borne equally by the parties. If the injured employee refuses to comply with any reasonable request for examination, or refuses to accept the medical service which the employer is required to furnish under the provisions of this Act AS AMENDED, his right to compensation shall be suspended and no compensation shall be due and payable while he continues such refusal.

Paragraph 4. No change.

Paragraph 5. Any physician whose services are furnished or unpaid for by the employer, OR BY THE EMPLOYEE, and who treats or makes or is present at any examination of an injured employee, may be required to testify as to any knowledge acquired by him in the course of such treatment or examination, as same relates to the injury or disability arising therefrom.

Paragraph 6. MEDICAL, SURGICAL OR HOSPITAL SERVICE RENDERED TO AN INJURED EMPLOYEE AT HIS OWN INSTANCE, OR AT THE INSTANCE OF ANY PERSON ACTING FOR HIM IN ANY EMERGENCY, SHALL

BE DEEMED TO BE A PART OF THE SERVICE REQUIRED TO BE FURNISHED BY THE EMPLOYER, AND IN EVERY CASE OF INJURY THE EMPLOYEE SHALL HAVE THE RIGHT TO NAME AND SELECT THE PHYSICIAN, SURGEON OR HOSPITAL WHOSE SERVICE THE EMPLOYER IS REQUIRED TO FURNISH BY THIS ACT, AND THE COST THEREOF SHALL BE THE DIRECT OBLIGATION OF THE EMPLOYER WITHIN THE MAXIMUM LIMIT OF \$100.00, AS SET OUT IN THIS ACT; provided, the pecuniary liability of such employer shall be limited to the charges for such services as prevail in the community where the services are rendered. All cases of dispute as to the value of such services shall be determined by the tribunal having jurisdiction of the matter of compensation to the employee.

## DEATHS

Dr. J. F. Stone, of Clarksville, died December 1, 1924, age 72. He was a graduate of the University of Louisville, Medical Department, of the class of 1875.

News of the death of Dr. Marcus Haase, which occurred at his home in Memphis, December 15, 1924, will come as a distinct shock to the profession of Tennessee. Dr. Haase was born in Natchez, Mississippi, December 31, 1870, moving to Memphis as a mere lad. He received his education in Memphis, graduating from the Memphis Hospital Medical College in the class of 1893. Dr. Haase always took a lively interest in all medical and social matters. He was not only active in his special branch of dermatology but was an enthusiastic worker in all matters which related to the betterment of humanity. His work in connection with the Medical Department of the University of Tennessee and the Memphis General Hospital accounted in no small measure for the present success attained by those institutions. The following resolutions, adopted by the General Hospital Board, bespeak the esteem in which he was

held by that institution. The profession of Tennessee, as well as that of the nation, has suffered a very distinct loss in the untimely death of Dr. Haase.

"Whereas, Dr. Marcus Haase died at his home in the city of Memphis on Dec. 15, 1924, and has for many years been the leading factor in building up the Memphis General Hospital to its present high degree of efficiency to the point where the Memphis General Hospital is rated as high as any hospital in the South, having enjoyed an "A" rating for a number of years; and

"Whereas, Dr. Haase has freely given of his time and high degree of talent unsparingly to the upbuilding of this hospital, as well as to every other institution in the city of Memphis having for its purpose the care and protection of the poor and needy.

"Therefore, be it resolved, That the board of trustees of the Memphis General Hospital deeply deplores the death of Dr. Haase and feels that his place can not be filled and that he will be greatly missed not only by the Memphis General Hospital, but by every charitable institution in the city of Memphis with which he was connected.

"This board appreciated the unselfish services freely given by Dr. Haase to this hospital through the many years that he has served on the medical advisory board, through which association the board of trustees not only loved him for his unselfish and untiring work, but more and more appreciated his ability in the hospital field, and not only do we feel that his death is a loss to us personally, but is a great loss to this hospital.

"Therefore, be it resolved, That the board of trustees and everyone connected with the hospital deeply sympathize with Dr. Haase's family in his untimely death, and that this resolution be spread upon the minutes of this board and that a copy of same be sent to his family.

"J. C. DEAN, Chairman.

"MRS. EARL A. HARRIS,

"R. O. JOHNSTON, Secretary."

**NEWS NOTES AND COMMENT**

Dr. A. T. Perry, of Camden, has moved to Dyersburg to practice.

Dr. Charles R. Reaves, of Knoxville, has located at Greensboro N. C.

Dr. Charles Hendley, of Paris, is doing post-graduate work in New Orleans.

Dr. H. E. Wood has located at Fountain City, Tennessee, a suburb of Knoxville.

Dr. V. D. Holloway has returned to Knoxville after an extended trip to Europe.

Dr. M. B. McCreary, of Woodbury, recently suffered the loss of his office by fire.

Dr. S. E. Gaines, of Sparta, has gone to Rochester, Minn., for post-graduate work.

Dr. W. W. Grant, of Denver, Colorado, was a recent guest of Dr. and Mrs. Jere Crook of Jackson.

Dr. D. R. Pickens, of Nashville, who was recently injured in an automobile accident, has entirely recovered.

Dr. Eugene Orr, of Nashville, was married February 1st to Miss Nancy Warren, of Spring Hill, Tennessee.

Dr. C. R. Thomas, who has been practicing in Mississippi, has opened an office in the Volunteer Building, Chattanooga.

Dr. Duncan Eve, Jr., was elected president of the Staff of St. Thomas Hospital, Nashville, at the annual meeting held in January.

Dr. Paul W. Allen, Professor of Bacteriology of the University of Tennessee, addressed the Knox County Medical Society, January 20th.

President Frank D. Smythe announces the addition of Dr. W. F. Clary of Mem-

phis on the Committee on Public Policy and Legislation.

Dr. Jarrell Penn, of Humboldt, has gone to Gary, West Virginia, where he will be connected, as company physician, with a large mining company.

Dr. John Cook, formerly connected with the Dyersburg General Hospital, has severed his connection with that institution and has gone West to locate.

Dr. S. F. McIntosh, who has been associated with Dr. Haskins for the past few years, has assumed the duties of Assistant Medical Director to the Volunteer State.

The announcement of the engagement and approaching marriage of Dr. Stuart Lawwill to Miss Sue Frierson, both of Chattanooga, has been made. The wedding will take place in the early spring.

Dr. E. N. Haller, of Chattanooga, who has been Assistant Medical Director to the Volunteer State Life Insurance Company for the past two years, has resigned his position and is now associated with Dr. John B. Haskins.

Dr. H. B. Everett, of Binghampton, was recently elected Chief of Staff of St. Joseph's Hospital, Memphis. At the annual meeting of the staff, announcement was made of contracts having been let for a large addition to the hospital.

Announcement has been made that the Weakley County Hospital at Martin will be open for patients February 1st. The city of Martin donated the former McFerrin school which was remodeled into a well equipped hospital. The money to equip it was subscribed by a large number of Weakley County citizens.

The Maury and Williamson County Medical Society met in joint session at Spring Hill January 13th. The meeting was enlivened by a self invited person who addressed it on the subject of "Reflex-O-

Therapy," whatever that is. However, before the meeting was over, he "got himself told."

The Rockefeller Institute for Medical Research has announced the release of the drug known as tryparsamide for use in the treatment of human and animal trypanosomiasis (African sleeping sickness and *mal de caderas*) and selected cases of syphilis of the central nervous system. This action is based on results reported from clinical investigations which have been in progress for several years. The drug will be manufactured by the Powers-Weightman, Rosengarten Company of Philadelphia, and will become available through the regular trade channels about January 1, 1925. In releasing the drug for the benefit of the public, the Rockefeller Institute desires it to be known that the Institute does not share in any way in profits that may be derived from the sale of the drug and that, with the cordial cooperation of the manufacturers, provision has been made for the maintenance of a schedule of prices on as low a basis as possible.

The Overton bill to lower the standards of medical education similar to a bill which was given a pocket veto by Governor Peay at the last Legislature, has been introduced in both Houses of the General Assembly. The bill was sponsored by Senator Overton in the Senate and by Representatives Fox, Lowe, Hutchings, Haynie, McKnight, Brooks and Loveless in the House of Representative.

The bill was presented as an amendment to the reorganization bill of 1923 by adding this section to the clause dealing with the certification duties of the state commissioner of education.

"Provided, however, that the department of education may not require or recommend standards of preliminary education of persons desiring to practice medicine, surgery or osteopathy or any other form of the healing art in the State of Tennessee higher than the requirement of a diploma from some reputable four-year high school."

The Graduate Nurses Association of Tennessee, through their legislative committee, have introduced a bill in both Houses of the Legislature amending the present act regulating the licensing and practice of nurses in Tennessee. The main provisions of the proposed amendments are: That the present Board be so changed as to be composed of three nurses and two doctors. The present statute provides for three doctors and two nurses. That a minimum standard be adopted for all training schools of nurses and that this standard be carried out to enable a graduate of a training school to apply for examination. That an inspector of training schools shall be appointed by the Board who shall visit all of the training schools of the state at least once each year. That the fee for examination shall be \$10.00. That all practicing, registered nurses shall re-register once each year and that a fee of \$1.00 be charged for this re-registration. That all the expenses of the Board and the Inspector shall be defrayed from the revenue derived by the Board.

## MEDICAL SOCIETIES

Officers elected for the ensuing year of the Polk County Medical Society are as follows: Dr. C. W. Strauss, Copperhill, president; Dr. F. M. Kimsey, Ducktown, vice-president; Dr. F. O. Geisler, Isabella, secretary-treasurer and delegate to the State convention; Dr. H. P. Hyde, Copperhill, alternate delegate.

Anderson County reports the following officers for their county society for 1925: Dr. J. M. Cox, Coal Creek, president; Dr. W. L. Carden, Andersonville, vice-president; Dr. J. S. Hall, Clinton, secretary-treasurer; Dr. H. E. Heacker, Oliver Springs, delegate; Dr. J. M. Cox, alternate delegate.

The Monroe County Medical Society met in regular session Tuesday, December 9, and elected officers for the ensuing year as

follows: Dr. S. N. Penland, Madisonville, president; Dr. T. M. Roberts, Sweetwater, vice-president; Dr. B. W. Bagwell, Madisonville, secretary.

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Officers for 1925 in the Wilson County Medical Society are: Dr. J. J. McFarland, Lebanon, president; Dr. R. E. Johnson, Lebanon, vice-president; Dr. J. R. Bone, Lebanon, secretary-treasurer.

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The Blount County Medical Society met on December 4 with a large representation of the society present. Dr. J. Walter McMahan, Alcoa, was elected president of the society; Dr. C. F. Crowder, Maryville, vice-president; Dr. F. A. Zoller, Maryville, secretary. The society has functioned admirably during the past year, it being a matter of record that a meeting was held nearly every week with a full attendance.

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Officers elected for the White County Medical Society for 1925 are: Dr. S. E. Gaines, Sparta, president; Dr. W. L. Brock, Sparta, vice-president; Dr. A. F. Richards, Sparta, secretary-treasurer; Dr. W. M. Johnson, Sparta, delegate; Dr. A. A. Bradley, Cookeville, alternate delegate.

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The following officers were elected for the ensuing year for the Roane County Medical Society: Dr. T. L. Smith, Rockwood, president; Dr. J. J. Waller, Oliver Springs, vice-president; Dr. W. W. Hill, Harriman, secretary-treasurer; Dr. J. C. Wilson, Rockwood, delegate.

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The newly elected officers for the Weakley County Medical Society for the ensuing year are: Dr. W. W. McBride, Gleason, president; Dr. J. A. Moore, Sharon, vice-president; Dr. G. C. Thomas, Greenfield, secretary-treasurer.

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Officers elected for the Hamblen County Medical Society for 1925 are: Dr. W. G. Ruble, Morristown, president; Dr. P. L. Henderson, Morristown, vice-president; Dr. C. T. Carroll, Morristown, secretary.

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Dr. B. C. Arnold, Jackson, who recently retired as president of the Tri-State Medical Society, and who is rounding out his fourth year as secretary-treasurer of the Madison County Medical Society, was unanimously chosen president of the latter body at the annual election of officers, December 2. Dr. J. L. Fields, Jackson, was elected vice-president, and Dr. R. B. White, Jackson, secretary-treasurer.

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Dr. L. T. Stem, of Chattanooga, was elected president of the Chattanooga Academy of Medicine and Hamilton County Medical Society at the recent meeting for election of officers for 1925. Other officers elected were S. S. Marchbanks, Chattanooga, vice-president, and Wm. Dulaney Anderson, Chattanooga, secretary-treasurer.

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Officers elected at a meeting of the Maury County Medical Society on December 8 for the ensuing year are: Dr. H. O. Anderson, Williamsport, president; Dr. R. S. Perry, Columbia, first vice-president; Dr. W. E. Black, Columbia, second vice-president, and Dr. W. K. Sheddin, Columbia, secretary-treasurer and delegate. The society met in joint session with the Williamson County Medical Society at Spring Hill on the second Monday in January. A large number of physicians from both counties were in attendance.

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At a recent meeting of the Smith County Medical Society officers for the ensuing year were elected as follows: Dr. R. E. Garrett, Dixon Springs, president; Dr. W. B. Dalton, Gordonsville, vice-president; Dr. B. J. High, Elmwood, secretary-treasurer.

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The following physicians were elected as officers for 1925 in the Campbell County Medical Society: Dr. George B. Brown, Jellico, president; Dr. William Gaylor, Jellico, vice-president; Dr. F. A. McClintock, Newcomb, secretary-treasurer.

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At a meeting of the Bradley County

Medical Society, December 18, officers were elected as follows: Dr. R. L. Bean, Cleveland, president; Dr. J. F. Gilbert, Cleveland, vice-president; Dr. H. W. Harris, Cleveland, secretary-treasurer.

Davidson County Medical Society and Nashville Academy of Medicine officers are: Dr. Charles N. Cowden, president; Dr. Eugene K. Orr, vice-president; Dr. Robert R. Brown, secretary-treasurer.

Officers elected for 1925 in the Memphis and Shelby County Medical Society are as follows: Dr. J. M. Maury, president; Dr. J. B. Stanford, vice-president; Dr. T. N. Coppedge, treasurer; Dr. A. F. Cooper, secretary; Dr. W. F. Clary, censor.

The Lauderdale County Medical Society elected officers for the present year as follows: Dr. J. R. Lewis, Ripley, president; Dr. T. E. Miller, Ripley, first vice-president; Dr. W. V. Sanford, Ripley, secretary-treasurer.

Williamson County reports the following officers for the present year: Dr. L. M. Graves, Franklin, president; Dr. Dan German, Franklin, vice-president; Dr. K. S. Howlett, Franklin, secretary-treasurer.

Jackson County Medical Society reports the following officers elected for the year: Dr. L. R. Anderson, Gainesboro, president; Dr. N. M. McCain, Gainesboro, vice-president; Dr. R. C. Gaw, Gainesboro, secretary. The society will hold its meetings at Gainesboro on the third Monday of each month.

The Hamblen County Medical Society met with the president, Dr. S. M. Ryburn, at his home on December 9, 1924, and after an elaborate banquet given in their honor the meeting was called to order and the following officers were elected: Dr. W. G. Ruble, Morristown, president; Dr. P. L. Henderson, vice-president; Dr. C. T. Carroll, Morristown, secretary-treasurer; Dr. S. M. Ryburn, Morristown, delegate; Dr.

F. F. Painter, Morristown, alternate delegate.

Officers have been elected for the Bedford County Medical Society for 1925 as follows: Dr. B. L. Burdett, Shelbyville, president; Dr. M. L. Connell, Wartrace, vice-president; Dr. W. H. Avery, secretary-treasurer; Dr. T. R. Ray, Shelbyville, delegate; Dr. J. P. Taylor, Wartrace, alternate delegate; Dr. J. T. Conditt, Flat Creek, censor.

The following officers were elected January 7, by the Loudon County Medical Society: Dr. T. J. Hickman, Lenoir City, president; Dr. Halbert Robinson, Loudon, vice-president; Dr. J. G. Eblen, Lenoir City, secretary-treasurer; Dr. G. M. Hall, Dr. J. T. Leeper, Dr. W. D. Padget, censors.

Officers for Grundy County have been elected as follows: Dr. W. P. Stone, Tracy City, president; Dr. C. W. Hembree, Palmer, vice-president; Dr. E. C. Lindsey, secretary-treasurer and delegate to the State Convention.

Rutherford County Medical Society has elected the following officers for 1925: Dr. V. S. Campbell, Murfreesboro, president; Dr. B. L. Ousley, Christiana, vice-president; Dr. J. A. Scott, secretary-treasurer.

## MISCELLANEOUS

The ninth annual clinical session of the American Congress on Internal Medicine will be held in Washington, D. C., March 9-14, 1925.

Washington clinicians and investigators of attainment will devote the entire session to amphitheater and group clinics, ward "rounds," laboratory conferences, lectures, demonstrations of special apparatus and methods, and the exhibition of unusual scientific collections. Civilian and governmental advices are united in the aim to make the week useful and memorable.

Practitioners and laboratory workers interested in the progress of scientific, clinical

cal and research medicine are invited to take advantage of the opportunities afforded by this session.

Address inquiries to the Secretary-General. WM. GERRY MORGAN, President,  
Washington, D. C.

FRANK SMITHIES, Secretary-General,  
1002 N. Dearborn Street, Chicago, Ill.

The following resolutions were sent to The Journal for publication. They are self-explanatory and need no comment here except to say that there is a wide diversity of opinion in regard to the feasibility of centralized institutional care as an adequate means of controlling tuberculosis.  
—Editor.

Humboldt, Tenn., Nov. 24, 1924.

To the Secretary of the \_\_\_\_\_ County Medical Society:

Dear Sir: I have been instructed by my county medical society to transmit to you the following resolution with regard to the establishment of a system of tuberculosis sanitariums by the State.

Whereas, There are no provisions made for the institutional care of tuberculosis as it occurs in the indigent population of our State, though we have well equipped and efficient private sanitariums for the well-to-do; and since by far the greater number of cases occur among those least able to obtain proper treatment; and since it is well known that no agency but the State can adequately care for these unfortunate victims who, under present conditions, are doomed themselves and are a constant menace to the whole population; therefore

Be It Resolved, By the Gibson County Medical Society, in regular session assembled, that the need is urgent and that the time is ripe for the establishment of such facilities, and that we use all proper methods to interest our legislature in this project; and that we have learned that our Governor is already awake to this vital necessity; that we communicate with the Governor and our county representatives with the purpose of getting passed the necessary legislation to this end at the meeting of the next Legislature; and that we ask the assistance of every county society and all affiliated societies in the State.

Be It Further Resolved, That in our opinion it would enlarge the usefulness of such an institution, both in the treatment of disease and in spreading information regarding treatment and prevention among the general public and practicing physicians as well, that there should be a sanitarium in each grand division of the State, and that the president appoint a delegate to communicate this action to those interested.

M. D. INGRAHAM, President.

B. T. BENNETT, Secretary.

B. S. Penn was appointed for this duty.

According to these instructions I write you with the hope that your society will approve of this movement and take prompt action to interest your county representatives and the Governor in such way as you think best.

(Signed) B. S. PENN, M.D.

## BOOKS RECEIVED

APPLIED PATHOLOGY IN DISEASES OF NOSE, THROAT AND EAR. Beck. C. V. Mosby Company, St. Louis. Price \$7.50.

As indicated in the foreword, this book is something new. It gives the pathology of the various diseases of the ear, nose, and throat in such a help to the reader. This phase in the ordinary text-book is rather dry and uninteresting, but this book presents the matter in such a way as to impress the reader as being worth while. The illustrations are numerous and enlightening. It is a much more readable book than one would judge from the title and will prove a valuable addition to the library of any practitioner of diseases of the ear, nose, and throat.

E. L. R.

A BOOK OF IMPORTANCE IN THE PRESCRIBING OF DIETS.

The dietetic importance of pure, plain, granulated gelatine has attracted so much attention, and the demand for more information has reached such a volume that the laboratories of the Charles B. Knox Gelatine Company have prepared a book of dietetically correct recipes with gelatine for Diabetes, Nephritis, High Blood Pressure, Gastritis, Gastric Intestinal Disorders, Fevers, Constipation, Obesity, and general mal-nourishment in infants and adults.

The recipes have been most carefully worked out under authoritative auspices and with each recipe is given a quantitative analysis of carbohydrates, fat, protein and calorie value.

The book will be mailed upon request—post-paid and free of charge—by the Charles B. Knox Gelatine Company, Johnstown, New York, to any physician or dietician who requests it.

NEUROLOGIC DIAGNOSIS. By Loral E. Davis, M.D., Associate Professor of Surgery, Northwestern University Medical School; Fellow of the National Research Council. 12mo. of 173 pages with 49 illustrations. W. B. Saunders Company, Philadelphia and London. 1923. Cloth. \$2.00 net.

This excellent little work is a short, concise book of the "case history" type. It consists of a brief though very efficient introductory section of about sixty pages dealing with the anatomy and physiology of the central nervous system, followed by twenty-nine illustrative case reports. Illustrative diagrams are freely used and facilitate

the admittedly difficult task of correlating the anatomic and physiologic facts with clinical disturbances in an orderly and retainable fashion.

The book should be well received by students and practitioners of internal medicine to both of which classes of readers the work can be cordially recommended as interesting and profitable. To the neurologist and teacher of neurology, the book should likewise appeal for its collateral and incidental value. The refreshingly low price of the book, \$2.00, is an added feature of which especial mention should be made.

R. C. D.

**MAY: DISEASES OF THE EYE.** Manual of the diseases of the eye. For students and general practitioners. By Charles H. May, M.D. Eleventh edition. Revised. Illustrated. New York: William Wood and Company. 1924. Price \$4.00.

The oculists have a number of excellent treatises on diseases of the eye at their disposal, but the student and general practitioner have but one satisfactory textbook on this subject.

The present edition is published in eight foreign translations, and is used as the textbook in most of the medical schools of the world. The book continues to keep up to date, though no mention is made of the use of foreign protein in eye conditions.

As a hand book of ready reference for those engaged in general work this book cannot be too highly commended.

R. J. W.

**A MANUAL OF THE DISEASES OF THE NOSE, THROAT AND EAR.** Fifth edition. Thoroughly revised. By E. B. Gleason, M.D., Professor of Otology in the Medico-Chirurgical College Graduate School, University of Pennsylvania. 12mo. of 660 pages, 212 illustrations. Philadelphia and London: W. B. Saunders Company. 1924. Cloth. \$4.00 net.

This book, combining in a small volume diseases of the nose and throat and the ear, should be of great value to the medical student and general practitioner.

It is, and always will be, an error, in the opinion of the reviewer, to include in any volume a description of tonsillotomy. This operation, which has been so completely replaced by tonsillectomy, and with such good reason, should no longer be

mentioned, save in historical writing.

In all other respects the book should fill a need in the field it covers and be a most useful reference work for those not making a specialty of oto-laryngology.

W. G. K.

**HANDBOOK OF MODERN TREATMENT AND MEDICAL FORMULARY.** Seventh revised and enlarged edition. Compiled by W. B. Campbell, M.D., formerly Resident Physician at the Methodist Episcopal Hospital of Philadelphia. Revision by John C. Rommel, M.D., and C. E. Hoffman, Ph.M. Cloth. 693 pages. F. A. Davis Company, Philadelphia. 1924. Price \$5.00 net.

As indicated in its title, this book is a medical formulary of prescriptions and agents found useful by medical men of prominence and experience in this and other countries. The fact that the work, the first edition of which appeared in 1908, is now in its eighth edition, attests to its usefulness as a reference. Its contained material is arranged under disease headings, alphabetically placed so that formulas suitable under various conditions may be conveniently found. A commendable feature of the work is that metric as well as apothecaries units are given in each prescription.

R. C. D.

**ABT'S PEDIATRICS.** By 150 specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totalling 8,000 pages with 1,500 illustrations, and separate Index Volume free. Now ready—Volume V containing 865 pages with 373 illustrations. Philadelphia and London: W. B. Saunders Company. 1924. Cloth. \$10.00 per volume. Sold by subscription.

This volume is devoted largely to the orthopedic conditions found in children. Each subject is well handled by one selected because of his particular aptitude to deal with the subject under discussion and each article shows an earnest effort toward thoroughness. The remainder of the volume embraces some of the transmissible diseases; also, an exhaustive discussion of infection and immunity. This work would be a valuable addition to any library.

A. G. N.

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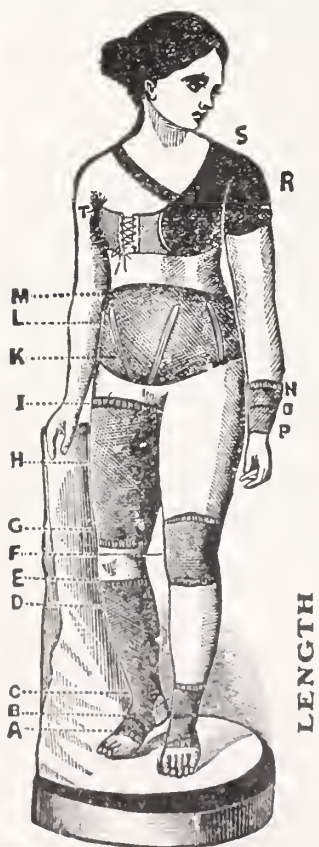
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## ARTERIOSCLEROSIS, DIAGNOSIS AND PROGNOSIS\*

DR. ROY A. DOUGLAS, Huntingdon.

**A**RTERIOSCLEROSIS literally means a hardening of the arteries, either inflammatory or a calcaneous degeneration of the arterial wall. It usually comes after forty and is more frequent in the stout. It is usually accompanied by compensatory enlargement of the heart, chronic interstitial nephritis and increase in the blood pressure. Fortunately, the heart is capable of increasing its size to take care of the additional work required to force the food through the smaller opening in the hardened arteries.

I think the interstitial nephritis may be either causative or the result, but most often the cause.

The elevation in the blood pressure is the most unreliable and misleading symptom in this condition. Doctors, patients and insurance companies are inclined to view blood pressure as a mathematical accuracy instead of a part of a group of symptoms. When I was graduated I expected a man with a blood pressure of 190 to soon die, either with apoplexy or coma, and unfortunately I have so advised several who are now enjoying reasonably good health after a period of four or five years.

The unequal distribution of the changes in the arterial wall is perhaps largely responsible for our inability to make an accu-

rate prognosis; following scarlet fever, tonsillitis or any acute infection we many times have a severe arthritis or rheumatism, but it is usually confined to a few joints or muscles, very seldom involving the whole body.

By this process of reasoning we can explain why one with a pressure of 170 will have paralysis or coma and one with 220 can continue with his work.

When a patient comes complaining of pain in the top of his head, some dizziness, pain about the heart; says that his eyes are failing unusually fast and his urine has a Sp. Gr. of 1008 or below, with albumen and a few casts, we can make a reasonably accurate prognosis that trouble is near even if his arteries are not very hard and his blood pressure is not high.

Some complain of severe muscular cramps; a few aphasia and some hot flashes, saying that all the blood rushes to the head. Palpitation is common. Pain about the heart and down the left arm are frequent. Others notice that their urine is very clear.

I had one patient, age 52, white male, whom I examined every three or four weeks for two years with a blood pressure of 180 to 200, with albumen and casts in the urine constantly, and much of the time a headache. For months preceding his death

\*Read before the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

by coma he had an occasional attack of aphasia of ten to twenty minutes duration each.

A white male, 37, died with a pressure of 250 in coma who actually starved to death because any food taken into the stomach produced distress. He would get a few hours' rest by drawing a few ounces of blood from his veins. He had been an excessive drinker.

A white female, 75, with very hard arteries and rheumatism, with a pressure of 200, had almost a constant oozing of blood from her nose for three months preceding death, which came apparently from exhaustion.

A white male, 65, with a pressure of 225, is making his usual crop this year with very little distress in any way. His urine is normal.

A negro man, 48, with a pressure of 200 for five years' duration, has a severe hemorrhage from his nose every few days which he looks forward to with pleasure, knowing that he will feel much better. During this time he has had ten or twelve attacks of delirium of ten to twenty hours' duration. The attacks are preceded a few hours by a severe headache.

A white female, 26, who weighs 200 pounds, has had a blood pressure from 160 to 200 for the past four years. At first she had great distress about the heart, palpitation and irregular heart, with severe headache. She has had many attacks of tonsillitis. Two years ago her tonsils were removed, and now the anginal pains, palpitation and irregular heart have disappeared, but the headache persists.

The help we may give these patients is unlimited. It consists in controlling their exercise, diet, habits and removing the focus of infection in some cases.

The exercise must be all they can tolerate and their diet sufficient to prevent starvation and the using up of the stored fat and protein in the body.

In the young and moderately advanced, removing the focus of infection certainly is

of great benefit. In the aged or very weak, I can see no benefit to be derived from extracting a mouth full of bad teeth or any other operation that produces shock.

So long as the kidneys function normally the patient can usually attend to his business if it is not too strenuous. When the Sp. Gr. becomes 1002 to 1008 he usually suffers so much from headache and general weakness that he is almost an invalid.

We must examine these people very carefully to advise them correctly about surgical condition as gall bladder, hernia and prostate operation.

Also, the patient must be told what work he can perform. To tell him to do light work and rest lots of the time may do a poor man a great injustice. We must answer specific questions. A housekeeper may continue with her duties long after a painter, carpenter or farmer must discontinue his heavy work, such as climbing and lifting.

The frequent removal of tonsils and the better care children are taking of their teeth should lessen the number of these patients in the future.

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#### DISCUSSION.

DR. R. B. WOOD, Knoxville: The subject of arteriosclerosis is interesting. As to etiology, it is extremely difficult to trace the origin because of the fact that patients come in so late that it is difficult to determine whether it is a primary disease of the blood vessels or of secondary or renal origin. A specimen of urine taken at random quite often shows nothing pathological, but it cannot be dismissed with a diagnosis of a normal urinary condition, and until you get the day and night urine separately, with the quantitative output, take the specific gravity of the different urines and use the various tests, you cannot determine whether or not they have the proper function and you cannot assume that the patient has a normal renal condition. A good deal has been written recently on the role which diet plays in the production of arteriosclerosis. Many are inclined to believe that high protein diet has nothing to do with it. In animal experimentation they have been able to show no effect. As to the role of the chlorides, this is still a problem for not all the cases are associated with retention of the chloride, but in cases in which you find

the chlorid retention, the problem of treatment is not so difficult as in the others.

DR. A. L. RULE, Knoxville: The great question we have to deal with in this trouble is what advice we should give these business men who come to us for advice as to whether or not they shall retire from business or continue. Many times if you give advice one way or the other if they take it you regret it, because you are worried to death with these men wanting to go back to business if you tell them you think it is advisable for them to quit. I think it is a great question as to what advice to give.

DR. L. L. SHEDDAN, Knoxville: I am not a student of arteriosclerosis, and I do not know whether or not I am a victim, and that is what I wish to ask. I wish to know when it begins and how to make a diagnosis. Recently I have developed a condition of "sternocardia" (?) or something like angina. On any physical exercise, walking two or three hundred yards, I develop a substernal pain and have to sit down and rest. I think there is no pathology in my condition; the renal function is absolutely normal. I have exhausted the skill of Knoxville and think my colleagues here believe that I am hysterical, so I decided to go up and see Dr. Lewellys F. Barker, of Baltimore. He thought perhaps I had a beginning sclerosis of the coronary arteries, and possibly a true angina. He gave me some instruction as to diet and exercise, and the last few weeks I have felt very well indeed.

What I would like to know is whether there is any evidence of an arteriosclerosis from the clinical manifestations which I have presented, the symptoms of severe pain on any physical exercise and so on. I could not go up two flights of stairs or walk two hundred yards without sitting down to rest. I am still very careful for fear I will bring on one of these attacks.

DR. F. D. SMYTHE, Memphis: I merely wish to say that having the real trouble myself I am sure that Dr. Sheddman's trouble is purely anticipatory. He has the same thing the boys had in Chattanooga, shell shock, when they were three hundred miles from the front. If he had the real disease there would be no question about it.

DR. ROY A. DOUGLAS, Huntingdon (closing): I wish I could answer the questions of both gentlemen. If I could I would have a reputation that would extend considerably beyond my immediate locality.

One of our greatest difficulties is to give these people advice, for of all the people in the world they will do what you tell them to do. They will quit work, they will do anything. They will ask specifically, "Can I stand on my feet in the store all day?" "Can I continue to paint?" They will pin you down and you will see the result of your endeavor in each case.

I am unable to tell Dr. Sheddman as to whether he has arteriosclerosis or not.

## APPENDICITIS\*

CHARLES HENDLEY, M.D., Paris, Tenn.

**I**N taking this subject into consideration I am fully aware of the fact that it is a very old one, and one that has been discussed many, many times; nevertheless, I do not feel that the last word has been said about the disease. There are some points as regards the management of the disease that physicians may overlook. Appendicitis is an inflammation of the vermiform appendix. There are several forms of the disease:

(1) Simple parietal or catarrhal appendicitis: In this form the vessels of the organs are distended with blood, the lumen at the intestinal end becomes partially or completely obstructed. Bacteria enters the lymph spaces of the wall of the appendix and pass rapidly to the peritoneal covering. In this form the inflammation may undergo resolution and the patient recover; or, on the other hand, to wait may prove disastrous. The appendix may thicken and become congested, and what was, in the beginning, a simple catarrhal appendicitis, may become chronic and the patient becomes the subject of a fresh attack at any time.

In catarrhal appendicitis, if the lumen of the appendix becomes closed, it is denominated as obliterative appendicitis.

(2) Suppurative appendicitis is due to the formation of pus in the walls of the appendix, or if about the walls of the appendix, it is denominated as an appendiceal abscess.

(3) Gangrenous appendicitis is a moist and septic condition, due to interference of circulation, and the tissue of the appendix destroyed by the actual microorganisms. In this form perforation is most likely to take place and multiple perforations are common.

The etiology:

(1) Age. Between twelve and forty years.

(2) Sex. It is about four times as common in male as in female.

(3) Climate. It is more common in summer months and more common in warm countries than in cold countries.

(4) Appendicitis is a bacterial disease, the most frequent bacilli being the colon bacillus.

(5) Foreign bodies play only a minor part in the cause of appendicitis.

The inflammation of the appendix may close up the lumen and convert it into a closed cavity, thereby producing an acute appendicitis.

(6) Trauma. A lick of fall may cause it.

(7) Fecolith causes a very small percentage. Feces in the gut at the base of the appendix should not be overlooked.

Pathology is about the same as inflammation elsewhere, barring the impaired function, which is questionable; as the appendix has no proven function we cannot add impaired function.

The symptoms of appendicitis should always be considered in the order of their frequency. It is very important to do this in order to arrive at a correct diagnosis.

(1) Sudden pain over the abdomen generally, which afterwards localizes.

(2) Nausea or vomiting, or both.

(3) Rigidity of muscle.

(4) Fever in the majority of cases. I have seen a few cases where fever was absent from the beginning to the end of the attack.

(5) Tenderness on pressure over the region of the appendix.

(6) Increased leucocytosis, as in other infections, may fail in both very mild and very severe cases.

In acute appendicitis the patient may be working when suddenly he has a pain, generally over the entire abdomen, usually about the umbilicus. The most fre-

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quent times are the early morning hours. The pain is most severe and colicky. The face is expressive of pain, and may become Hippocratic. The posture is one of recumbency, with the right thigh and knee partially fixed. Usually in from twelve to thirty-six hours the pain becomes localized in the right iliac fossa. Not until this state does the true inflammatory pain develop.

(2) Nausea is the rule in appendicitis. Vomiting occurs early about four or five hours after the beginning of the pain. In children vomiting is often early, violent and persistent; early vomiting is a reflex symptom due to distention of the appendix. If vomiting persists, it points to a peritonitis, pus formation, or intestinal obstruction, unless due to the administration of morphine.

(3) The rigidity is always present after localization of the pain, in the right rectus muscle.

(4) Fever. In appendicitis there is almost always some fever, although it may be very slight and of a brief duration. The fever is not usually ushered in by a chill, but it may mount to 102 or 103 within a few hours; however, this is rare, and in the event it does mount to 103, other diseases should be looked for. A sudden drop in temperature indicates a calamity, usually gangrene or rupture of the appendix.

(5) Tenderness. A symptom invariably present is tenderness on pressure; it may be diffuse, but more often in the right iliac fossa over McBurney's point. The tenderness may be in the region of the gall bladder. In other cases, the loin; it may be near the umbilicus, or in the opposite side. However, these are the exceptions and not the rule. If tenderness exists on the right side and then develops on the left side, severe spreading peritonitis usually exists.

Differential diagnosis. Pain precedes nausea and vomiting and elevated temperature. If fever precedes pain, the condition is not appendicitis. If vomiting

precedes pain, the condition is probably not appendicitis.

Pain, as a rule, when carefully studied as to its onset, severity, beginning, location, and especially as to radiation and final location, is one of the most helpful guides in making a diagnosis. In appendicitis, pain always precedes vomiting and elevated temperature.

The reliable thing about the pain in acute appendicitis, is that, as a rule, it never begins in the right side, but nearly always in the pit of the stomach. It may be a general pain over the abdomen, but it will radiate to the right side from a few to twenty-four or thirty-six hours. Pain beginning in the right side, without a history of several preceding attacks with the appendix is, as a rule, always due to some other lesion, usually renal, ureteral, or ovarian twisted pedicle.

We have to differentiate from the following: Typhoid fever is differentiated by the step-ladder temperature, rose-colored spots, widal tests. The white cell count in typhoid fever is usually subnormally low, rather than elevated, as in acute appendicitis.

Richardson tells us that in every case in which typhoid fever is suspected, operation is not justifiable on the hypothesis of an existing appendicitis; unless there are local pain and localized tenderness in the appendicular region associated with distinct rigidity, and that operation should be postponed, in any case, where the constitutional signs are severe and the local signs difficult to detect. I have found that this is true by a sad experience, having operated upon one case of typhoid fever for appendicitis, but when we have pain, tenderness, rigidity, with or without distention, operation must be performed when one recognizes the possibility of typhoid fever.

Bowel obstruction is differentiated by the pain remaining at the same location, usually about the umbilicus. A tumor may be palpable. The shock is most pronounced. Seldom, if any, elevation of temperature, it being usually subnormal.

In renal colic the pain runs down the groin, testicle, thigh or rectum; the urine shows blood or pus; the x-ray may show a stone.

Appendicitis is most commonly confused with gall bladder disease, and is differentiated principally by: the pain in gall bladder disease is chiefly in the epigastric region, and passes to the right shoulder blade. The pain is usually more acute and localizes itself in the region of the gall bladder, and there is always tenderness over the gall bladder. The vomiting is most violent and may be almost continuous.

Perforated gastric ulcer is very often diagnosed as appendicitis, its differential points being violent pain in the epigastric region and shock. The board-like rigidity will always make the diagnosis of the perforated ulcer of the stomach. The pain and ulcer of the stomach usually comes on after the stomach is empty, and the time is about three hours after a meal or just before the next meal; it may be at midnight, and is relieved by food and is often called hunger-pain.

In duodenal lesions, unless perforation has occurred, they never give severe pain that is characteristic of acute appendicitis, and as a rule the temperature is not near so high.

Lobar pneumonia of the right base and pleurisy may cause abdominal pain and be mistaken for appendicitis. When a patient suffers from vomiting, abdominal pain, and high fever, the chest should be examined. The main differential point is that the temperature and respiration are quite out of keeping with the tenderness over the appendix, and the white cell count is usually three times as high in pneumonia as in appendicitis.

Other things that may be confused with appendicitis are: (1) Disease of the cecum (malignant); (2) acute tubercular peritonitis; (3) twisted pedicle of an ovarian tumor; (4) extra uterine pregnancy; (5) peri-nephritic abscess; (6) ovarian and tubal inflammation; (7) fecal impaction.

The pain from a distended or ruptured tubal pregnancy is always suspected if a correct history of menstruation is obtained. The patient has usually gone over her time for about two weeks. She then becomes sick again, thinking that she has a normal period, but the flow hangs on too long.

If the fimbriated end of the tube is ruptured the haemorrhage may be, and usually is, mild; or, on the other hand, if it is in or near the uterine end, there may be great pain, shock and haemorrhage unto death. The pain in these cases is primarily in the right side.

We now come to the consideration of the proper management of a case of acute appendicitis. Warbasse says that most cases of appendicitis will recover without operation, and estimates the percentage as being seventy-five per cent. His opinion is not in keeping with that of Murphy, who said "that nearly every case of appendicitis will have a recurrent attack if not operated on. He said also, "that operation is indicated in all cases as soon as the diagnosis is made."

My observation and very limited experience causes me to think that the late Dr. Murphy was correct in his views.

Medical treatment should be resorted to only in cases where a competent surgeon cannot be had, where materials and place are not accessible for the operation; when the patient, for any reason, is not in condition for operation; when the patient will not permit an operation; when it is the first attack and of an extremely mild type, or any patient who does not command the highest surgical skill, and when the attack subsides rapidly after the first twenty-four to thirty-six hours.

The non-operative treatment of Ochsner is applicable to the above. The Ochsner treatment is as follows:

The patient should be put quietly in bed, the stomach should be washed out to minimize as much as possible the amount of food to pass through the bowels. Within the first six to twelve hours of the attack a full dose of castor

oil may be introduced through the stomach tube after lavage. This is so early in the disease that the peristalsis excited can probably do no harm, but after twelve hours the inhibition of bowel activity is desired and the oil should not be given. The lower bowel should be emptied by warm enema. Nutrient enema should be depended upon for sustenance. Fluids are best introduced by proctoclysis. Pain is relieved by codine and the ice bag or hot water bottle; nausea calls for stomach washing. The vaccine of colon bacillus is, in the early stage, of proven value. The serum is given in a twenty c. c. dose, and a few days after 100,000,-000 c. c. colon bacillus vaccine is given to prevent a recurrence.

The non-operative treatment is made necessary by neglect or inability to perform a timely operation and a preparatory deferred operated.

The only safe treatment for an acute appendicitis is an appendectomy; provided, a competent surgeon operates and operates from the first eighteen to twenty-four hours of the disease. Operation for appendicitis should be done while the disease is still confined to the appendix. After the peritoneum has been invaded, the circumstances are altered. In these cases, the skilled surgeon should operate at once, except in moribund cases. The operation should be done quickly, with as little handling of the tissues and intestines as possible. The spreading of infection to the new areas of the peritoneum is the probable and the greatest danger; unless the surgeon who operates is one with some surgical training, or one with a very large experience, this character of patient will have a better chance to recover by the non-operative treatment.

The position of surgery should be (while it is true that some cases of appendicitis will recover without operation), that in competent hands operation has so little danger, the hazards of the disease are so great, and its course so uncertain, that the operation should be the rule; pro-

vided, a competent operator is at hand. It should not be the rule for the unskilled. There is always a surgical risk as well as a pathological one.

Any patient with a mild appendicitis, under circumstances that would not ordinarily call for operation, may be operated on, if he contemplates taking a journey where competent surgical aid is not available. To do this would be to guard against the danger of recurrent attacks.

We must operate promptly if the pulse is small, tense, and above one hundred; if there are persistent vomiting, delirium, and if pain and rigidity are marked, or in case where pain has been most severe and suddenly passes away, without the use of morphine.

I like to follow McBurney's rule, which is, if on seeing the patient again within six hours after the first visit, if the pulse is worse, operate at once; if the patient is not any worse, there is no pressing danger. After a patient has had two or more attacks of appendicitis, all surgeons agree that the appendix should be removed.

Some important things to be remembered by the physician when first called to see a case of appendicitis are, under no circumstances, purge the patient with calomel or salts; it only aggravates the condition and helps kill the patient quicker.

The most of my surgical cases are referred to me by other physicians. Very often I have the attending physician accompany a case of appendicitis for operation, who, when giving me a history of the case, will add when he mentions the treatment, "Doctor, I have given him ten grains of calomel, which was followed immediately by two drams of Epsom salts and not getting any result therefrom I then gave two ounces of castor oil, which was not effective." I do not think that we should hesitate to inform our brother physician that is the wrong thing to do. We should do our duty to suffering humanity, even though we may incur the ill will of some attending physician,

as I have already done in one or two instances by imparting the above information.

Morphine should not be given until after the diagnosis is made, and then very sparingly. To do so gives the patient a false sense of security. It may be given only in cases who refuse operation and after a positive diagnosis has been made. We should never tell a patient, "I think I can carry you through this attack." One who does make a statement like that has no assurance on which to base it. Such a statement may be responsible for an occasional death.

On examining the abdomen for an appendicular condition, palpation should be made with the whole palm of the hand flat over the abdomen, not with two or three fingers gouging down over the appendix. To press down and gouge with the fingers may convert an unruptured appendix into a ruptured one.

We should always give the patient a very thorough examination before opera-

tion. It should always be borne in mind that the symptoms of appendicitis come in the order of their frequency, and any variation therefrom is probably not appendicitis.

I will close this paper by saying that the only safe treatment in acute appendicitis is operative. The mortality varies from two to seven per cent. My mortality rate at present is a little higher, although I have included surgical moribunds in my records.

It has well been said that the surgeon need not be concerned one way or the other about his statistics. Most patients that die after operation should not be classified as an operative mortality; they died despite the operation. Had they been operated on earlier they should have recovered. The surgeon should only be concerned to do the best thing that can be done for each patient, the thing that offers the best hope of recovery, and the statistics may be left to take care of themselves.

## TWO UNCOMMON CASES

TYPHOID FEVER WITH PURPURA  
ACUTE LYMPHATIC LEUKAEMIA WITH ENLARGED THYMUS

W. T. DESAUELLE, A.B., M.D., and R. B. WOOD, A.B., M.D., Knoxville

VERY recently, in the clinic of the Knoxville General Hospital, there came under our observation two rather uncommon conditions which, in the final analysis, turned out to be greatly interesting, and a report of them may be of some value.

Case No. 1. Patient E. L. F., age 17, female, colored school girl.

Chief Complaint. The patient was admitted to the hospital for profuse bleeding from the nose and mouth. She had been indisposed for two weeks previously and also complained of severe frontal headache and diarrhoea, but did not discontinue her studies in school. Several hemorrhages from the nose occurred during the week before admission to the hospital. No personal history of any importance could be obtained except that the patient had formerly had attacks of nose bleeding about every month.

Physical Examination. On entrance patient had a fever of 103.4, pulse 120, respiration 26. On examination the scalp, eyes, ears and nose showed no abnormalities. The mouth was filled with blood stained sputum and several blood clots. After rinsing the mouth with water no bleeding points could be made out on gums, buccal mucosa or naso-pharynx. The tonsils were somewhat hypertrophied, no bleeding points. The posterior cervical glands were palpable, otherwise neck was negative.

Chest: Respiratory movements seemed somewhat limited on both sides. The percussion note was somewhat impaired throughout and on percussion the patient complained of pain in both anterior and posterior chest walls. There were a few coarse, moist rales heard in the apices of both lungs. The breath sounds were less distinct than normal. Nothing abnormal was noted about the heart and vessels. In the abdomen the patient complained of pain and tenderness everywhere. She held the walls rather rigid and there appeared to be considerable distension. The genitals presented no abnormalities. The skin appeared normal, there were no subcutaneous hemorrhages. The flexes were all present. Urine showed a small amount of albumen, a large number of pus cells, and a few red blood cells. The

blood showed red blood cells, 2,550,000, white blood cells 5,000, haemoglobin 84%, and color index 0.6%. The differential count showed polymorphonuclear neutrophile cells 55%, eosinophiles 2%, basophiles 0, lymphocytes 41%, large mononuclear cells 1%, transitional cells 1%. The red cells showed no marked changes. The coagulation time was six minutes. The Wasserman showed (+++) with cholesterinized antigen, (+) with acetone insoluble antigen. Blood culture was negative. Widal was negative. Throat culture showed many staphylococci and occasional streptococci, and a few micrococcus catarrhalis. The patient died 48 hours after admission to the hospital.

During her entire stay the temperature and pulse both remained high and respiration about same as on admission, and she had frequent large hemorrhages which either came from the stomach or lungs, and died after a very severe hemorrhage.

Considering a history of previous nose bleeds, the repeated massive hemorrhages, blood in urine, and exitus, lead us to believe that the patient had suffered with purpura hemorrhagica or the morbus maculosus of Werlhof. Cases of Werlhof's purpura occur with hemorrhages in the skin and in more than 50% of these cases there is high fever. Apparently the objective symptoms fitted in very nicely with such a diagnosis.

A few hours after death autopsy was performed with some really astounding revelations.

The body is that of a young colored girl about fifteen years old. She is rather slender, but not especially emaciated. There is dried blood around her nose and mouth. Small puncture mark left elbow with an area of ecchymosis about one cm. in diameter. Puncture (hypodermic) wounds on the right arm, three of them, also shows small ecchymosis.

On incision the little blood that runs out is rather thin, and slightly watery red in appearance.

On opening the body cavity the small intestines are distended, purplish in color. Both large and small intestines considerably distended. In the caecum a good sized ecchymosis is seen in the wall, with an enlarged gland just beneath it, purplish in color, about two cm. by 1 cm.

Breast plate removed, but pleural cavity in the

left has some bloody looking fluid probably run in from the incision.

Pericardium thin, containing considerable amount of bloody looking fluid.

Heart not too large, although pale in appearance. Walls of the muscle in the anterior surface and cut surface pale brownish in color. Beneath the intima of the left ventricle and on the papillary muscles are numbers of small and large dark red purplish areas—ecchymoses.

Tricuspid valve, aorta, pulmonary and mitral are all thin and perfectly patent.

Left lung is small, no adhesions in the pleural cavity. Surface is smooth and shining and glistening, but scattered all over beneath the pleura are small punctate hemorrhages. On section cut surface is smooth and satiny, no excess of exudate, but many small hemorrhages all through the lung tissue. Description of the left lung applies entirely to the right.

Stomach is about normal in size, filled with some kind of fluid. There are a few small hemorrhages under the peritoneum, in the stomach wall. Pretty good sized hemorrhage in the mesentery around the pylorus. On removing the stomach and intestines from the abdominal cavity the mesenteric glands are observed to be considerably enlarged, pink in color. Towards the lower portion of the small intestine many large sub-peritoneal hemorrhages and towards the ileum the many lymph glands are enormously enlarged, some of them measuring about six by five cm. On opening the stomach it is seen to be filled with about one cupful of greenish brown material. The mucosa of the stomach shows about the normal number and character of folds but is everywhere dotted with old and fresh punctate hemorrhages. The intestines are filled with slightly greenish material. In the duodenum are seen a few old looking small ecchymoses, which disappear in the jejunum where the mucosa again takes on a normal appearance.

In the lower bowel is found thick, tarlike material very adherent to the walls. There is a very large quantity of this black tarry looking material in the ileum. Within three feet of the ileocaecal valves the lymphoid nodules in the ileum are observed to be very much enlarged, swollen and ulcerating. Down towards the caecum are more enlarged patches. At the end of the ileum is observed a conglomerated mass of Peyer's patches swollen and covered with a dry greenish cake. These patches have huge nodules all over the surface. One patch measures six by two and one-half cm. On opening the colon it is found for about twelve inches from the caecum to be studded with dark greenish brown nodules considerably elevated and between these are seen many small and large ecchymoses.

The branchial, mediastinal and retroperitoneal

lymph glands were small and showed no enlargement similar to that described in the mesenteric lymph glands.

The liver about normal in size, surfaces smooth, color apparently normal. On cut section it presents a reddish brown surface; no excess of exudate.

The spleen is pretty large for the size of the patient and measures fourteen by nine and one-half by four cm., very dark red in color. On cut section presents a dark red area with a good many tiny white translucent nodules.

Pancreas looks to be about normal size, color and consistency, section apparently normal.

The adrenal bodies are very large and are well developed in this patient.

Left kidney easily removed from its bed. Ureter apparently normal. Capsule strips with ease, leaving a smooth cortex everywhere. However, the surface of the kidney is seen to contain a moderate number of tiny ecchymoses. Cut section shows a rather swollen cortex. The submucous lining of the pelvis shows a good sized ecchymosis. Right kidney same as left. On section of the right kidney the pelvis is found to be completely filled with a dark red blood clot.

The uterus small, puerile. Tubes smooth and glistening. No apparent inflammation. The uterus was removed and opened and the endometrium seems to be normal in every respect. One ovary contains a small pedunculated tumor, apparently a little fibroid. Ovaries seem to be studded with tiny cysts. The bladder is about normal size and contains about one teaspoonful of bloody urine.

Microscopic Description. The Peyer's patches show an absence of mucosa, only a few lymphoid cells and an enormous number of large cells of the phagocytic type, containing red blood cells and cell detritis. These cells have pushed aside the normal structures and filled the sinuses completely.

The mesenteric glands show a very few small round cells, several areas containing brownish pigment and the whole structure is engorged with wandering cells (macrophages) enormously invading all the sinuses. All of these cells are stuffed with red blood cells and cellular detritis.

The liver shows marked parenchymatous degeneration, and here and there scattered through the liver tissue are observed masses of wandering cells (phagocytic cells) which have either displaced or destroyed the liver tissue. These cells are similar in all respects to those observed in the Peyer's patches and the lymph nodes.

The spleen is literally stuffed with phagocytic cells previously described. Here and there some splenic pulp is observed, but it is greatly crowded by the dense mass of phagocytic cells. In the spleen the macrophages are observed to contain more dark brownish or black granules of detritis

(haemoglobin) than was found in those cells in Peyer's patches and the mesenteric lymph nodes.

**Microscopic and Anatomical Diagnosis.** Typhoid Fever with purpura hemorrhagica (Werlhof).

Histologically and microscopically this patient suffered with a malignant typhoid fever, complicated by a purpura hemorrhagica, the latter condition causing death. In spite of the negative blood culture and Widal, there can hardly be any question as to the diagnosis of typhoid fever. No reports of descriptions of autopsy findings in purpura have been found that record the condition described in the Peyer's patches, lymph glands, liver and spleen seen in this case. It seems that there is only one other condition that might possibly produce such a picture and that is even remote when we consider in detail the findings.

In acute lymphatic leukaemia massive hemorrhages and purpura are common, but the blood count in no way warrants one designating this as a case of acute lymphatic leukaemia. The histological picture in the Peyer's patches, lymph nodes, etc., is not seen in lymphatic leukaemia, for in that condition the lymph tissue is replaced by enormous numbers of cells of the lymphoblastic type and the phagocytic cells or macrophages (Macallum) do not in any way resemble nor could they be mistaken for lymphoblasts.

Therefore, we have observed a case of malignant typhoid fever, complicated and terminating fatally with purpura hemorrhagica.

Case No. 2. Patient C. O., colored, male, age 23, single, laborer.

Chief complaint was shortness of breath and swelling of legs, "lumps" under arms and in his groins. The present illness began four weeks ago when patient noticed "lumps" under his arms and in his groins. These masses gradually grew larger and appeared in his neck. About three weeks ago patient had a bad cold, coughed considerably and expectorated slightly blood tinged sputum. About the same time the cold appeared and continued up to admission. The patient had nycturia two to three times each night. There was no hematuria or dysuria. Two weeks ago he first noticed that his neck and eyes were "puffy." A week later both feet and legs began to swell greatly and he was distressed with a

shortness of breath which finally became so great that he had to stop work and come to the hospital.

In his personal history he had mumps, measles and whooping cough when a child. Other personal history is negative except for a Neisserian infection three years ago. On admission one was impressed at once with the great oedema of the face, the lids being swollen nearly shut. There was excessive lacrimation of the left eye. The teeth were in rather poor condition and the gums showed considerable pyorrhea. The tonsils were hypertrophied and there was considerable post-nasal dripping. The chest showed nothing abnormal. Lungs were normal except over the lower posterior portion of each lung where the percussion note was somewhat impaired and mucus rales were fairly numerous. Occasional coarse moist rales were heard throughout both lungs. Heart was not enlarged, but at the point of maximum impulse was heard a soft blowing systolic murmur which was transmitted towards the axilla. On inspection the general contour of the abdomen was asymmetrical owing to a distinct large bulging in the right hypochondriac region, more pronounced about three inches below the right costal margin. The abdominal walls seemed tense, but this was due to the extensive oedema of the skin rather than to rigidity of the muscles. It was impossible to palpate the liver and spleen, although the marked asymmetry suggested an enlarged liver. There was some indefinite pain on deep palpation in the right iliac fossa and an indefinite area of flatness in the flanks extending up to about the midaxillary lines which moved on changing the position of the patient. The anterior and posterior cervical glands were considerably enlarged, varying in size from one-half to two and one-half cm. A gland was felt high up in the left occipital region. The supra and intra-clavicular glands were easily palpable.

The axillary glands were felt as good sized masses, measuring from two to four cm. in diameter. A gland was felt on the left chest wall at the level of the nipple. Both epitrochlear glands showed enlargement and the inguinal glands also were much greater in size than normal. The foreskin and scrotum were greatly oedematous. The reflexes were all present. The skin showed a general extensive anasarca. That of the arms and legs presented a brawny oedema which pitted on pressure to the depth of three-fourths of an inch.

The urine, except for an occasional trace of albumen, was negative. Wassermann was negative.

On admission the blood showed the following characteristics: Red blood cells 2,000,000, white blood cells 106,800, haemoglobin 50%, color index 1.2%, polymorphonuclear neutrophile cells 2%, eosinophiles 0, basophiles 1, lymphocytes 95%, large mononuclear cells 2%, myelocytes

none. The red blood cells showed much anisocytosis. The lymphocyte cells were practically all of the small lymphocyte type. The platelet count was 59,000. Subsequent blood examinations on different days showed the white blood cells 122,200, 101,000, 106,200. However, the third blood count showed a marked change in the type of lymphocytes (96%). On this occasion, instead of small lymphocytes, the cells had changed in appearance. They were large with rather indefinite nuclei, very few granules, some protoplasm and some indented nuclei. The oxydase reaction however, did not show the dark purplish staining granules in these cells such as it produces in the cells of myeloblastic origin. Consequently the cells present on this occasion were lymphoblasts. Later counts again showed enormous number of cells of the small lymphocyte variety. At no time during the patient's stay in the hospital did the lymphocytes fall below 96% in the differential count. Towards the end the red blood cells dropped to 1,350,000, and the haemoglobin to 30%.

The sudden onset, (patient worked with a pick and shovel up to the time of his admission to the hospital) the dyspnoea, the white blood count, the preponderance of lymphocytes, the anemia, the moderate general glandular enlargement, and the enlarged liver stamp this case as one of acute lymphatic leukaemia, which was borne out by the autopsy findings.

The patient remained in the hospital for 17 days and during this time the oedema entirely disappeared from the extremities, foreskin, scrotum and skin of the trunk. The liver could be easily felt as a much enlarged mass three to four finger breadths below the costal margin, extending from the right nipple line almost over to the left nipple line. The spleen could not be palpated. With the disappearance of the oedema the general condition of the patient seemed to improve, but 12 days after his entrance the patient began to have nose bleed, the blood running back into his throat and from time to time he would spit it up.

The first attack, which was a gradual oozing, lasted twenty-four hours without cessation and from this time on he would bleed a few hours and then it would stop for an hour or so. Thus he continued for five days to have prolonged oozing of blood from the nasal membranes and progressively became weaker until his death, seventeen days after admission and a little over six weeks from the onset of the disease.

Autopsy. The body is that of a young colored boy and around his nose and lips is a large quantity of dried blood. There is no special oedema of the skin. The shins are entirely normal. Circular incision chest midline incision connected. As the tissues are cut the blood flows out and is seen to be red, but more or less watery.

The breast plate is removed without difficulty and at once there is observed just beneath the menubrium, and stuffed up between the two ends of the clavicle, a large mass of tissue about five and one-half to six cm. in width by about six in depth; it is rather whitish, interspersed with yellow spots, and on palpation is very firm and extends down about the upper portion of the pericardial sac from which it is dissected with ease and can nearly be peeled off from this structure. This mass is also attached to the inner border of the upper lobe of the right lung. As the mass is dissected away it is found to have completely surrounded and imbedded the carotid arteries and innominate artery. It reaches high up on the sides of the trachea and on the anterior portion of the trachea up to and touching the thyroid gland, but it does not seem to spring from this gland as the lobes of the thyroid can be made out as distinct separate tissues. This tumor lies on top of the isthmus of the thyroid. On closer dissection it has completely surrounded the trachea and bronchi with a firm adherence to the walls. After it has been dissected free we can see it had grown around the innominate artery, the carotid arteries, left subclavian, and is attached by very dense tissues to all the vessels running up into the neck from which it is dissected away with difficulty. This mass measures eleven and one-half by ten by about three cm. in the various diameters and weighs 200 gms. On cut section it presents a smooth, glistening, translucent white surface in the center of which is a structure apparently a nodule about three cm. in diameter and in one-half of which is noticed a small dead white and yellow area one cm. in diameter. Bands of fibrous tissue run about in several directions.

The pericardium seems to be greatly enlarged and the upper portion formed into a rounded dome, which from base to apex measures fifteen cm. and in width twelve cm. On opening the pericardial cavity there is seen about two ounces of thin, clear yellow fluid. The lining of the pericardial cavity is smooth, shining and glistening. There are a large number of small subserous hemorrhages on the surface of the heart, more especially over the right ventricle and a few over the left ventricle. As the heart is removed from the pericardial cavity a large blood clot squeezes out of the right auricle and in contrast to usual blood clots is very pale pink and translucent in character. Heart removed without difficulty. Right auricle lining smooth, white, shining, glistening. Right ventricle same. Tricuspid valve thin, almost transparent, no abnormalities. Pulmonary artery smooth, shining, valves thin, almost transparent and collapses against the wall.

Left ventricle lining same as the right ventricle, musculature is pale, otherwise normal. Bicuspid valves normal, aortic valves also normal. There are one or two small yellow plaques on the base of the aorta.

**Pleural cavities:** The left pleural cavity is smooth and glistening and free from any adhesions or evidence of inflammation, past or present. Left lung removed without difficulty and at once there are noted very large lymph nodes about the bronchi two or three times the usual size of these structures. They are pink and black mixed in color. The surface in some places is grey, others more red or pink and containing considerable amount of foamy mucus. The lungs crepitate everywhere, no nodules or healed lesions observed. The posterior portion of the lower lobe shows a rather excessive oedema and exudate and is red in color (passive congestion due to position). The right lung is very closely adherent to the chest wall by dense adhesions which are removed with difficulty. These adhesions extend all over the front down into the axilla as far as the posterior axillary line. The entire posterior portion of the lung is fairly free from adhesions. As the right lung has been removed there are many adhesions on the upper surface, while the posterior surface is smooth and glistening, and there are observed on the posterior surface a few small petechial hemorrhages. A peculiarity of this lung is noted in that there are only two lobes in this lung. It is also noted that the upper and lower lobes are matted together by innumerable fine glistening strands of adhesions. The adhesions break up fairly easily and are not dense and tough like those of long standing. On section the lower lobe is seen to contain a considerable amount of frothy fluid. Cut surface, however, shining, and glistening, satiny and is fairly crepitant, although it has a certain tendency to solidity (hypostatic congestion). The upper lobe does not show the marked congestion of the lower lobe although some is present. No active or healed lesions are found on the cut surfaces.

The abdominal cavity on being opened shows the intestines just moderately distended, no free fluid at all, but the liver is at once noted to be enlarged and extends three finger breadths below costal margin in right nipple line, four finger breadths below costal margin a little to right of midline and in midline almost four finger breadths below intercostal angle. The liver was removed with little difficulty and found to measure twenty-five cm. by twenty-one cm. by nine cm., and it weighs 2229 gms., surface is smooth, shining and glistening. Gall bladder filled with yellow bile. Wall is thin and perfectly normal. Liver is rather pale in color, cuts with ease, presents a rather pale surface which shows some nutmeg appearance. After the liver was removed from body cavity there were noted along the bile duct several good sized glands.

The spleen shows no abnormalities. It measures eighteen by ten by four and one-half in its greatest thickness and weighs 390 gms. Surface is smooth and glistening. On section the spleen

pulp is very solid and firm, has a rather greenish pink appearance. As the stomach and intestines are being dissected out many large (that is varying in size from two to four cm.) lymph glands are observed.

They all show the same characteristics of pink and white cross sections with apparently small hemorrhages into the tissue. The stomach and intestines smooth, shining, glistening, pasty white, removed without difficulty. Around the caecum some rather large glands are observed. The appendix is observed to be buried under the peritoneum probably, not especially inflamed. The retroperitoneal glands all show the same type of enlargement described in other glands around the body.

The left kidney is removed without difficulty, is almost dead white except for a small pinkish area on the lower pole, measures twelve by six and one-half by four, weighs 209 gms. Capsule strips with ease leaving smooth white surfaces everywhere. There are observed one or two small ecchymotic spots in the cortex. On section the cortex is considerably thickened, shows the same white appearance, dotted with a little red, as observed on the surface. Kidney weighs 190 gms. Right kidney not quite as large as left, capsule strips with ease, surface is a little more mottled than the left kidney. Cut surface shows same characteristics as the left kidney.

Pancreas somewhat enlarged, dull white in color, on section appears normal.

The bladder was considerably distended with urine which appeared just like water. On opening the bladder the mucosa appears as a dead white lining.

The aorta was opened and the intima shows up as a smooth lining with a few slight elongated yellow plaques, very soft in nature. The glands at the bifurcation of the abdominal aorta are also considerably enlarged and form a flattened mass against the promontory of the sacrum.

Stomach is filled with about a pint of greenish black fluid that is very thin and watery. The mucosa shows normal folds and there is one small ecchymosis down towards the pylorus. Pylorus appears normal. Duodenum shows normal appearing mucosa and is filled with a light yellow thick mucus content, smells a little bit sour. Jejunum appears normal, no evidence of any intestinal hemorrhages. Down in the lower jejunum intestinal contents take on greyish black color. These contents are not tarry in any respect, nor do they suggest intestinal hemorrhages. Peyer's patches not enlarged. Colon normal.

The marrow cavity of the right femur was opened and the bone marrow exposed appeared rather dark red in color in contrast to the other organs which had been shown to be pale and white. Some of the marrow tissue was removed for examination.

### Histological Study.

**Bone Marrow:** Smears from the bone marrow show a large number of good-sized cells staining deep blue, non-granular, and practically all nucleated, there being hardly any cytoplasm visible. A good many red blood cells are seen, many of them nucleated, some large and some small and some irregular forms indicating the great strain on the hematopoietic organs. The oxidase reaction on these smears showed only occasional cells with the deep blackish blue staining granules. Consequently all the blue staining cells seen in the bone marrow smears (except reds and nucleated reds) are lymphoblasts, and there is an extensive overgrowth of the entire bone marrow with cells of lymphoblastic origin. Sections of the bone marrow on examination show the tissue to be greatly replaced by large lymphoblastic cells which on an average shows more than 150 lymphoblastic cells to the field, about twenty red blood corpuscles and one or two myelocytes. Occasionally an eosinophilic myelocyte and a neutrophilic myelocyte is seen.

**Lymph Glands:** Section of the lymph nodes shows their normal element of closely packed small lymphocytes to be entirely displaced by large numbers of cells of the lymphoblastic type. The reticulum is noted to be considerably increased in amount throughout, indicating somewhat of a fibrosis developing in the lymph gland. A good many red blood cells are present, but the spaces between the reticular fibers is nearly everywhere occupied by the abnormal cells. No lymph follicles can be found.

**Spleen:** Pulp of the spleen presents a marked change from the normal, for instead of large numbers of lymphocytes and red blood corpuscles filling the splenic and venous sinuses, these are everywhere replaced by lymphoblast cells. Only a very few red blood cells are found in the spaces, and the reticular tissue also appears to have increased in amount, the walls of the sinuses being considerably thicker and containing more cells than normal. No Malpighian corpuscles can be found.

**Liver:** The hepatic cords are distinct and apparently unaltered. The lobule is distinctly made out, and there appears to be no changes in its structure. However, the interlobular connective tissue is uniformly distended with very large numbers of small and large lymphocytes, many of which appear to be lymphoblasts. Every one of the interlobular connective tissue areas are thus stuffed with lymphocytes. Under high power there seems to be a parenchymatous degeneration of the liver cells themselves.

**Kidney:** A most remarkable condition is present in the sections from the kidney. More than 85 per cent of the secreting tubules have disappeared and in their places is found a considerable quantity of reticulated fibrous tissue in

the meshes of which are enormous numbers of small and large lymphocytes and lymphoblasts; in fact, many fields are found with no tubules at all. This same condition involves the collecting tubules. The few secreting tubules which are present are in an extensive state of degeneration. Many of the nuclei stained poorly or not at all. The edges of the cells are fragmented and frayed in appearance and the lumen is filled with a considerable amount of poorly staining celled detritus. The glomeruli, however, have not suffered obliteration to the same extent as the tubules. However, the glomeruli are observed to have shrunk considerably in size and some of them show some desquamation of cells. The individual cells of the glomerulus show many clear areas.

**Thymus:** Sections through this tissue show in some places great masses of round cells such as are usually found in the thymus gland separated by fibrous septa, but in other areas instead of these large masses of round cells, there is present much fibrous tissue, the meshes of which contain a good many cells, and in still other areas there is a great preponderance of this fibrous tissue present with very few cells. Another area shows what appears to be a coagulative necrosis.

Many of the smaller blood vessels show concentric arrangement of flattened cells rather loosely applied about the walls. Occasional Hassall's corpuscle is seen; in fact, they are quite scarce, although a good many structures with concentrically arranged cells are observed here and there throughout the tissue, but are not typical Hassall's corpuscles. In some areas these structures are quite numerous in the lymphoid tissue. They are probably abortive Hassall's corpuscles. The nuclei of these cells are somewhat elongated and vesicular in type. No giant cells are found. Here and there are seen quite a few small cysts, mostly lined with a single layer of flattened epithelium, although some of them have several layers. Everywhere are present innumerable strands of fibrous tissue indicating the extensive fibrosis which characterizes this growth. The picture presented in this growth is not a great deal different from that described by Ewing as a thymoma.

Several features of this case are a little different from the ordinary. The large lymphocyte and lymphoblast is more common in chronic lymphatic leukaemia than in acute lymphatic leukaemia. The enlarged thymus is not usually seen in this disease. The large white kidney is mentioned by Macallum, but it is not frequently mentioned. The sudden onset with fever suggests that this condition may be infectious in nature, as several have already expressed their belief concerning the disease.

## SYPHILIS\*

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**S**IR WILLIAM OSLER said, "Know syphilis in all its relations and manifestations and all other things clinical will be added unto you."

This great physician meant to say, in making such an assertion, that no man knows this disease, whose very origin is shrouded in mystery. The origination of most diseases may be traced with a more or less degree of accuracy, but it is different with syphilis, for God, man and beast have in succession been held responsible for the beginning of this dread scourge.

It is contended by some that it antedates the time of Moses, and that God had reference to it when, in the twentieth chapter of Exodus, in one of the commandments said to have been given Moses, wherein He declares, "For I, the Lord, thy God, am a jealous God, visiting the iniquities of the fathers upon the children, unto the third and fourth generation of them that hate Me." Those who believe in its Biblical antiquity state that reference is again made to it in the book of Psalms, chapter 38, verses 3 to 7, inclusive. This reads: "There is no soundness in my flesh because of thy indignation; neither is there any health in my bones because of my sin. For mine iniquities are gone over my head; as an heavy burden, they are too heavy for me. My wounds stink and are corrupt, because of my foolishness. I am pained and bowed down greatly; I go mourning all the day long; for my loins are filled with burning, and there is no soundness in my flesh."

To offset these contentions as to syphilis being known in Biblical times, it is stated by renowned scientists and investigators that there is conclusive evidence offered by the only parts of the human body which, under favorable conditions, withstand the ravages of time and maintain their original form after death. These are the bones.

Since it is known that syphilis attacks the bones, these dumb, but necessarily infallible witnesses were appealed to for proof of the existence of syphilis in the old world, both in prehistoric and in historic time up to 1493. Careful search was made amongst unnumbered thousands of human skeletons of prehistoric, antique and medieval origin in India, Greece, Italy, Germany, France and England, and not one single bone showing undoubted syphilitic changes has been found. As far as Europe is concerned, we have every reason to believe that syphilis was entirely unknown until the discovery of America.

Columbus sailed from Seville, Spain, on August 4, 1492, landing on the island of Haiti, October 12 of the same year. Members of his crew contracted the disease, and on the return of the expedition to Spain, on March 15, 1493, scattered it broadcast. Ruy de Isla, one of the most renowned surgeons of his day, practicing at Barcelona, Spain, stated that prior to the return of Columbus, the disease was entirely unknown in Spain.

Toward the end of the year 1493, Charles VIII, King of France, raised an army to invade Italy. This army was composed of hired soldiers from Spain, Switzerland, Hungary and from many other countries of Europe. Following King Charles' army, it was estimated that there were above 14,000 Spanish prostitutes alone, not counting those of other nationalities.

Charles VIII entered Naples with his army on February 22, 1495, and shortly afterwards, the invasion being over, his army was disbanded. These hired soldiers, returning home, conveyed to all parts of Europe the contagion of syphilis, which they had contracted in Italy from Spanish women, who had brought it from their own country.

The disease is said to have reached Bris-

tol, England, by way of Bordeaux, France, in 1497, but the early records of syphilis in England are singularly scanty, and it is not until 1503 that an entry appears in the Privy Purse expenses of Elizabeth of York, Queen of Henry VII, "Concerning twenty shillings paid to a surgeon who healed John Petriche, one of the sonnes of Mad Beale, of the French Pox." The Scotch surgeons also report that syphilis did not appear in Aberdeen, Glasgow and Edinburgh until the latter part of 1497.

In omitting all description of the disease itself, and passing indirectly from the historical origin to the treatment, it is well to bear in mind that the *spirochaeta pallida*, or micro-organism causing this malady was not discovered by the German scientists, Schaudinn and Hoffman, until 1905. More real progress has been made toward establishing the treatment of syphilis on a scientific basis since their valuable discovery than was made during all the preceding centuries.

Let us now take up in detail the steps which should be employed in the management of this disease in its initial stages. As a rule, the patient comes to us within a few days following the appearance of the sore or sores for advice and treatment. What are we going to do—use palliative or expectant treatment, or institute radical anti-syphilitic treatment? How many of us are able to say from the appearance of the lesion that we are dealing with a syphilitic condition? Are we justified in concluding from the clinical aspect of the sore alone that it is luetic, and in telling the patient that it is syphilis? When we make such an assertion we are dooming the patient to long continued treatment, and to the mental horror that such knowledge entails. This preys upon the minds of some patients who are morbidly inclined to such an extent that they commit suicide. Personally, I have had two patients to kill themselves after being told that they had this disease. If one is practicing in a city, and is not equipped to make "dark-field" examinations, he may send the patient to a laboratory for such an examination. If

the sore is syphilitic, the *spirochaeta pallida* will usually be found. Negative "dark-field" reports do not always signify that syphilis does not exist, for if the sore has been cauterized, or medication applied, the *spirochaeta pallida* will, in all probability, not be found. One should not rely upon a single negative report, but should instruct the patient to report to the laboratory for several consecutive daily examinations. If the examinations are persistently negative, one is then justified in treating the sore locally in order to heal it up. The patient should not be told that he does not have syphilis, but rather, should be instructed to return in within four to five weeks in order that his blood may be taken for a Wassermann test. It is relatively common to have the blood of such patients show strongly positive within a few weeks after these negative "dark-field" examinations, so one should be guarded in committing himself one way or the other. It is better to adopt the late Mr. Wilson's policy of "watchful waiting" in the making of a diagnosis at this time, or else one is apt to be placed in the position of some of our renowned judges, who, on occasion, are forced into reversing their decisions.

There is nothing to be gained by taking the patient's blood for a Wassermann test within the first two weeks after the appearance of the sore, as almost invariably the blood at this time is found to be negative.

It is not thought that any physician is justified in giving anti-luetic treatment until the diagnosis is established or confirmed by laboratory methods. There are several reasons why treatment should be withheld until this is done. In the first place, we cannot be sure that we are dealing with syphilis, and anti-syphilitic treatment prevents a positive diagnosis being made from the blood later on. In the second place, the patient himself, after the disappearance of the sore and other objective symptoms, doubts that he really had it. The result is that he usually goes to another physician for verification of the diagnosis, and the second one consulted, informs him, from

the lack of clinical symptoms, or from a negative report on the blood taken at this time, that he does not, and probably did not have it. The consequence is that physician No. 1 not only loses a patient, but also makes an enemy, as it is only natural for the patient to think that the physician told him that he had syphilis in order to get a fee for treatment. Under such circumstances, unless one has laboratory reports to substantiate his diagnosis, he is placed in an embarrassing predicament. The most unfortunate thing about an occurrence like this is, that if the patient really had syphilis, he will not receive an adequate amount of treatment on account of the disagreement in diagnosis.

Conceding that we are dealing with primary syphilis, how shall we treat it? The sore or chancre does not require local treatment, unless there is a mixed infection, as it rapidly disappears under anti-luetic treatment. Intensive treatment should be instituted as soon as the diagnosis is verified. Naturally, following intensive treatment, a strongly positive blood will shortly give negative findings, but these negative reports only signify that the patient is responding to treatment. We are in no wise deceived by such reports during the first year or eighteen months into believing that we have eradicated the infection and that the patient is cured. We know that if treatment be discontinued for a sufficient length of time, the vast majority will again give positive tests. How then are we to know when a patient is really free from all infection, and how long should treatment be continued? No one can give a definite answer to these questions, since each patient is a law unto himself. No two have the same resistance to any disease, nor do they react alike to any form of treatment. What may be adequate to effect a cure for one, may be entirely inadequate for another. I believe, however, the more one sees of this disease, and studies its remote effects, the more he will be inclined to treat it over a long period of time. My personal opinion is that a

patient should be kept under observation and intermittent treatment for fully three years.

Before pronouncing a patient cured, I should want to know that the blood was negative on several examinations, made at intervals of four to five months between examinations, following treatment extending over a period of three years. In addition, I should want to be assured that the cerebro-spinal fluid was also negative, since it is not uncommon to find in patients with old luetic infections, that the blood is negative and the spinal fluid strongly positive.

The form and dosage of the salvarsan, as well as the mercury, is a matter of individual preference with the physician having charge of the case. Formerly, I was accustomed to give the insoluble salts of mercury, such as the grey oil, calomel in suspension, or the salicylate by deep injection into the gluteal region. I have, however, discontinued the intra-muscular injection on account of the pain associated with its introduction, and also, because of the occurrence of nodosities following its use. Such nodosities are produced by inflammatory exudation around the deposits of the mercury, and while the most of them undergo resolution within the course of a few weeks, there are some which do not, and these remain indefinitely, unless they undergo necrotic liquefaction, or abscess formation. For these reasons, I prefer to use the soluble salts of mercury, intravenously. When it is given this way, one knows that it is all taken up by the circulating blood, and that the patient receives the full therapeutic benefit from it, even though it be more quickly eliminated than by other modes of administration. It causes no reaction and there is practically no pain associated with its introduction. Inunctions are filthy, and at best this form of administration is a poor one, since the skin is excretory in its function rather than having absorbable power, and besides, one has no way of judging how much of the mercury is really taken up.

Mercury by mouth is apt to cause gastric disturbances, as well as salivation, or ptyalism. Mixed treatment in the early stages of syphilis is not founded on a sound therapeutic basis, for the reason that the iodides have no spirochaetacidal effect, and at this time, there are no gummatous changes taking place, which alone could justify the giving of the iodides along with the mercury.

There are two agents used in the treatment of syphilis, which I desire to mention in passing. The first of these is bismuth. My experience with this drug as an anti-luetic agent is very limited, but I believe it to be a valuable adjunct in the treatment of syphilis, and that it will soon be universally employed as a remedial agent. Its indication is apparent in that class of patients whose blood fails to respond serologically after persistent salvarsan and mercury medication. It is in the treatment of these so-called "Wassermann-fast" cases that we may expect to see its most brilliant results.

The second preparation is sulpharsphenamin. There seems to be an erroneous idea entertained by the profession as to the length of time this drug has been used as an anti-luetic agent. It would appear that the current opinion is that this is comparatively a new remedy, but, of course, the truth is that both sulpharsphenamin and neoarsphenamin were discovered by Ehrlich, and the patents for both were taken out by him in 1912. He, however, realized the inferiority of the therapeutic value of sulpharsphenamin and discontinued its use in favor of neoarsphenamin. That it has a certain therapeutic value was recognized by the Germans, but its use was limited by them chiefly to intramuscular injection in the treatment of children, whose small veins rendered intravenous medication difficult to administer, and to the very obese, whose veins were hard to locate. Sulpharsphenamin was first manufactured and put on the American market by a certain chemical firm at Philadelphia, but this pioneer firm has always admitted

that it was markedly inferior to neoarsphenamin. This view is held by other chemical firms manufacturing this preparation, with the exception of a certain one, whose name need not be called. This particular firm has widely advertised sulpharsphenamin, claiming that its therapeutic value is as great, or greater than other arsphenamin preparations. Those who advocate its use emphasize the fact that it may be given either intramuscularly, or intravenously, and dwell upon its not causing induration and soreness, if given intravenously and infiltration takes place. It is conceded that this is true, but this claim is one of doubtful virtue, since the only factor of interest in considering what arsenical preparation should be used, is the relative value of the preparation, as shown by subsequent Wassermann reports on the blood following its use.

In an article entitled "The Chemotherapy of Sulpharsphenamin," appearing in the Journal of the American Medical Association, November 29, 1924, by Raiziss, Severac and Moetsch, of Philadelphia, the following statement is made: "Taking the chemotherapeutic index as a criterion of therapeutic efficiency, sulpharsphenamin, based on trypanocidal tests, is considerably inferior to arsphenamin, and at most, one-half as efficient as neoarsphenamin." Assuming that this is true and that sulpharsphenamin is only one-half as efficient as neoarsphenamin, then, if Ehrlich's statement made in 1906 is true, that inefficient doses of the arsenical preparations have a tendency to produce an acquired resistance of arsenic-fast trypanosomes, its use is contraindicated. Reasoning from the results of Ehrlich's experiments on the cultivation of arsphenamin-fast trypanosomes, it is not improbable that arsphenamin-fast strains of the spirochaeta pallida may be produced by the same means. I am aware that many syphilologists contend that there can be no such thing as arsenic-fast strains of spirochaeta pallida, on account of the spirillicidal power of the drug.

Akatsu and Noguchi, however, have produced an arsenic-fast strain of *treponema pallidum*, by exposing cultures of the organism to gradually increased concentrations of the drug. This acquired resistance was not constant, being lost after several transfers through non-medicated media.

The findings of Raiziss, Severas and Moetsch are in accordance with the work of Corbitt and Meyers, of New York. In a paper read before the Scientific Section of the American Pharmaceutical Association at Asheville, N. C., in September, 1923, they showed by a table of experiments conducted by themselves, that sulpharsphenamin was two and one-half times less efficient than neoarsphenamin.

If these statements are correct concerning the trypanocidal properties of these respective arsenicals, and if we also accept the consensus of opinion of scientific investigators that the trypanocidal test is an accurate indication of the curative power of the arsphenamin group in the treatment of syphilis, then we must admit that sulpharsphenamin is an inferior drug and should be replaced by those preparations having greater efficiency, in order to avoid the possibility of drug-resistance.

As to the treatment of syphilis of the central nervous system, or cerebro-spinal syphilis, paresis may be quickly disposed of. Until 1917, it was considered an incurable disease and no known treatment had the slightest effect on its course. With, or without treatment, there were periods when to all appearances the patient's condition was seemingly improved, but without exception, all progressed to a

fatal termination. In the year mentioned, Professor von Jauregg, of Vienna, acting on the assumption that severe infection exerts a beneficial influence on paresis, inoculated his patients with malaria. It is stated that this method of treating the disease has resulted in restoring a certain percentage of paretics to an earning capacity.

Tabes dorsalis, or locomotor ataxia, may yield to intraspinal treatment. This is known as the Swift-Ellis method of treatment, and consists of the injection of salvarsanized serum of the blood directly into the spinal canal. Severe reactions follow this form of treatment, but I have never yet seen a death result from its use.

In closing, I desire to emphasize that syphilis should not be treated in a routine manner, and no rule governing dosage, intervals between injections, periods of rest or length of treatment should be strictly adhered to. One should be influenced by the individual clinical and serological findings of each case, and should outline his treatment accordingly. Of all patients, the syphilitic is the most undesirable to treat. It matters not how intelligent such a patient may be, it is practically impossible to impress upon him, or her, the importance of continuing treatment for a long period of time, after the disappearance of all objective and subjective symptoms. The larger percentage discontinues treatment after a few months, believing there is no necessity for further continuance, with the result that ten, twenty or thirty years later, paralysis or insanity develops, in a considerable number of cases.

## FRACTURES IN INDUSTRIAL INJURIES; WITH ESPECIAL CONSIDERATION OF COLLES

HENRY COX, M.D., Nashville

**F**RACTURES, as a class of injuries, are the most poorly treated (or mistreated) group of pathological conditions. With a proper knowledge, as afforded by the x-ray, of the nature of the displacement and the principles involved in the reduction and retention of fragments, one needs only patience, and the courage of his conviction, to obtain satisfactory functional results.

It has been my fortunate experience, during the past four years, to be associated with Drs. Duncan Eve, Senior, and Junior. During this period I have assisted in the treatment of 5,953 patients who had received injuries, the majority of which occurred in industrial occupations. In this series of injuries, fractures occurred in 571 patients or 9.5 per cent, and of these fractures 20.7 per cent were compound. The most frequent fracture was of the fingers, which occurred in ninety-six cases or 16.8 per cent. The least frequent was of the sternum, which was encountered only one time. It is worthy of note that of the twenty-four fractures of the skull, nineteen were compound, and of sixteen fractures of the nose, 100 per cent were compound. Of the thirty-seven cases of fracture of the femur only three were compound, and of seven fractures of the vertebrae, a compound condition did not occur. Fracture of the pelvis occurred seventeen times of which two were compound.

The fracture which often leaves a deformed limb is Colles fracture. This occurred fifty-two times or in nine per cent of all fractures. Colles fracture is important, both because of its common occurrence, and because of the serious functional disability which follows bad treatment. Da Costa describes it as "a trans-

verse or nearly transverse fracture of the lower end of the radius between the limits of one-fourth inch and one and one-half inches above the wrist joint, the lower fragment sometimes mounting the dorsum of the upper fragment, the two fragments sometimes impacted." It is usually caused by a fall upon the pronated hand or in cranking a gasoline engine. The lower end of the radius may be displaced three different ways, namely: (1) backwards, (2) upwards, (3) to the radial side. Usually the styloid process of the ulna is also fractured. The classical silver-fork deformity, which usually results, is due largely to the fact that there is much swelling of the tendon sheaths on both sides of the wrist. This is more apparent below the posterior annular ligament, and above that of the anterior, thus exaggerating the bony deformity. Serious displacement will be shown more by an alteration of the line of the wrist joint than by anything else. In general terms, it may be stated that a displacement is of serious omen in proportion to its proximity to, and encroachment upon the joint. The normal wrist should first be studied in comparison with the one that is traumatized. In supination and pronation of the hand the styloid process of the radius is one-half inch nearer the hand than the head of the ulna. The thenar eminence is lower than the hypothenar. The width of the wrist between the styloid process should be compared by a measurement of each with calipers or a tape. Localized pain upon pressure over the site of the fracture is especially noted. Swelling in the region of the fracture and ability to hyperextend the hand are found. However, it is unnecessary to cause a patient to submit to a long and painful manipula-

tion in order to acquire uncertain information that can be gained certainly by proper radiography without any discomfort to the patient. Therefore, let it be laid down as an axiom that an x-ray picture of the injury should be taken, in two different planes, in every case of suspected fracture, as soon as possible after the accident. In cases of displacement, this should be repeated after reduction has been undertaken. If the patient shows the slightest disposition to see the skiagram, by all means show it to him and explain its significance. This roentgenographic examination should be made in the form of a permanent record plate or print. A similar record should be made immediately after reduction, and if necessary at regular intervals until the patient is dismissed from treatment. When the fracture has been reduced and immobilized, roentgenographic records and notes should be made concerning the treatment. Thus the surgeon will have evidence of great value should the question of mal-union or non-union arise.

In reducing the displacement of a fracture, a general anaesthetic should be given to relax the muscular contractions. To reduce the fracture the deformity should be increased by hyperextending the hand, thus unlocking the fragments, then longitudinal traction and hyperflexion. If the fracture has been reduced properly, splints are necessary only to keep the parts at rest, as the fragments are rarely subsequently displaced. Therefore, a simple dorsal straight splint, advised by Roberts, we find is the most satisfactory dressing. No dressing, however, should include the fingers. As soon as the pain, swelling and tenderness have abated the splints may be removed daily,

and careful passive motion encouraged. Splints may be removed within two and one-half or three weeks. By this treatment a patient having a Colles fracture will have full use of his hand at a much earlier period than he would otherwise. "Many poor results," Henderson says, "following Colles fractures are due to prolonged splinting." Most of the cases of good function following, in spite of an unreduced fracture, are included in two classes: (1) impaction without angulation and (2) partial lateral displacement. However, an imperfect reduction usually is followed by permanent disability with possibly an almost useless hand. In long standing cases of deformity, much can be done by osteotomy.

The general health of the patient is of importance in obtaining satisfactory results and especial attention should be paid to those who are undernourished and anaemic. In suspected cases of syphilis a Wassermann examination should be made.

### CONCLUSION

(1) Fractures occurred in 9.5 per cent in this series of industrial injuries; 20.7 per cent of these fractures were compound.

(2) Of the total number of fractures, nine per cent were Colles fractures.

(3) Localized pain and swelling are always found in fractures.

(4) An x-ray examination should always be made of suspected fractures; both an antero-posterior and lateral views of corresponding limbs being made.

(5) A general anaesthetic for reduction; early removal of splints after reduction; passive motion and massage are necessary for ideal results.

## OPERATIVE TECHNIQUE IN CERTAIN CATARACT OPERATIONS

J. MCCHESENEY HOGSHEAD, Chattanooga

I WISH to direct attention to an operative technique which, in my experience, has given more satisfactory results in the treatment of certain selected cataract cases than have been obtained by me by the use of any other technique.

In the city in which I practice, you already know, is a large manufacturing town. Most of the cases I refer to in this article are complicated cases secondary to injury. I do not know of a more embarrassing position confronting an eye surgeon than to realize that if you operate upon an eye ball, you are almost sure to lose the eye so soon as incision is made. The operation I refer to is nothing more than a "bridge cataract operation." I find so few men are using this method and so little is written or referred to about it in our leading textbooks on "Ophthalmology" that I wish to call your attention to it today, because I feel so many operations are being done on eyes, and with fatal results, which could be avoided by the use of the operation I am now using. I would not recommend this operation in all cases of cataract, but I would recommend it in cases in which eyes have undergone injuries, like punctured cornea or sclera or in eyes showing plus tension. You will find this operation works extremely well in patients with prominent eye balls, receding forwards, and shallow orbits. I think it has the following advantages over the cornea stitch operation; the eye heals much more rapidly, infection reduces to minimum and patient does not have to be in bed longer than twenty-four hours. Patients hard to control and unable to pay for private nursing are subjected to very little risk in this operation. By looking at the accompanying plates you will understand its advantages.

(Plates not furnished.—Editor.)

### DISCUSSION.

DR. J. B. BLUE, Memphis: I think one is not apt to favor anything he does not know much about, and I do not know much about this type of operation. About the corneal suture, following its introduction in Memphis by Dr. Ellett, most of us who do cataract operations have employed his stitch routinely. I think it is very helpful. The method of Dr. Hogshead I think I will try.

DR. E. W. PATTON, Chattanooga: I do not know where Dr. Hogshead got his idea, but it is indeed a good one.

If you have ever had to remove a lens from these traumatic cases with the tension so high that apparently to merely open means loss of contents of the eye, you can appreciate this bridge.

I have had the pleasure of assisting Dr. Hogshead in this operation, and contrary to what you might expect, it is not difficult to deliver the lens.

In my opinion it has a decided advantage over the corneal suture in that at no time is your support entirely removed, whereas with the suture you only have the advantage of the "tie," but if you have very much tension you will not need the "tie" because the contents of the eye will follow your incision.

It appears to me that in making the iridectomy under this flap or bridge, that in the event there should be some protrusion of iris it might serve to relieve tension.

DR. E. C. ELLETT, Memphis: I wish Dr. Hogshead would give us more details about the operation as to the iridectomy and whether he does it as a routine. He said he did it from the side. It seems to me that the iridectomy is in some respects a disadvantage, not that one does not get good results, but that there are many people who are bothered by the glare attending a permanent enlargement of the pupil. I think if an iridectomy is made it is well to have it upward, where it is covered by the lid. I have never seen this operation performed. I saw it attempted once and the operator cut the flap clear off. I do not know whether that is likely to happen often or not. As Dr. Hogshead said, it is for selected cases.

In case one does make a mistake and cut the flap clear off, it could be easily reattached by some method of suture, like Verhiff's. It looks as if we were all hunting for an operation that will give us better results.

DR. WILLIAM W. POTTER, Knoxville: I have

attempted this operation several times, as the doctor has brought out, in certain kinds of cases. I attempted it three times in a type of case I should not have attempted it and had to cut my flap off.

There was one objection that Dr. Ellett spoke of that I have found, and that is the iridectomy done on the side. Some patients, as he brought out, do object to the glare, and that seems to increase this symptom.

As to the corneal stitch that he compared this operation with, I have used that in two or three instances and was much gratified with the results. I was especially gratified that I used this in one case recently because I am sure that if I had not

had this corneal stitch I would have lost the eye entirely.

As to the difficulty in delivering the cortical substance, I have not found any particular difficulty in that. I think it is a very good operation in selected cases.

DR. J. McCHESNEY HOGSHEAD (Chattanooga (closing)): Most of the cases that we have attempted this operation on have been cases of injury in which I wished to do an iridectomy, whether for getting out a cataract or not, because they were cases of injury. There is no reason whatever why one should not do the iridectomy in the center as well as to the side.

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## END RESULTS IN INTRA-NASAL SINUS OPERATIONS\*

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STEWART LAWWill, M.D., Chattanooga

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**I**N a recent study of some thirty cases of para-nasal sinus infection operated upon by the intra-nasal route, twenty were completely cured, four had to be operated upon more than one time and six were relieved of the symptoms of pain and toxemia only, the discharge continuing more or less unabated by the operative procedure.

These cases ranged from six weeks duration to eight or ten years and the cases which went on uncured had been suppurating more than two years and with one exception had reached the polypoid stage. The cases that responded more readily had existed on the whole a much shorter time and the destructive bony changes had not taken place so extensively, although some were complicated by the formation of polypi.

The mucous membrane lining the sinuses, as we all know, has ciliated epithelium covering it, but this is lost early in any suppuration and is not easily regenerated; the mucous membrane itself is peculiarly constructed and united with the periosteum of the sinus wall so that

any suppurative process involving the mucous membrane for any length of time is bound to involve the bony wall also and if continued long enough will cause necrosis and absorption of the bone itself. The bony wall becomes in time like paper or may undergo cystic changes, hyperplasia and polypoid degeneration. It then becomes a pathologic membrane so distorted in its function as to have nothing in common with the normal and this is the type that nothing short of complete exenteration will cure. This, fortunately, is more common in the case of the ethmoids and this structure can frequently be removed in its entirety through the intra-nasal route.

I have not yet had the experience with the external methods, except in the case of the antrum, because I am not yet convinced that the results from it are much better than those from the intra-nasal route and I do not believe that one is justified in attempting the external route until all other intra-nasal means have been tried repeatedly and failed and not even then just because of the presence of a suppurative process unless the patient is suffering systemic symptoms from it that demand relief. For the end-results from radical procedure are not always much

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\*Read before the Eye, Ear, Nose and Throat Section of the Tennessee State Medical Association, Knoxville, April 8, 9, 10, 1924.

better than those from conservative methods, if the leading authorities of today can be believed, and they are often attended with more or less unsatisfactory sequelae, which Dr. Ross Skillern of Philadelphia enumerates for us as follows:

In the case of the frontal sinus:

1. There may be persistence of pain.
2. Hemiasesthesia of brow and scalp.
3. Persistence of discharge.
4. Neuralgia about the cicatrix.
5. Diplopia.
6. Epiphora.

Most common of which is the discharge.

In the case of the maxillary:

1. Anaesthesia of upper lip and teeth on operated side.
2. Permanent fistula into mouth.
3. Excessive dryness of nose on affected side.

4. Gradual return of discharge.

In the case of sphenoid:

1. Gradual closure of opening before suppuration ceases.
2. Re-infection with intermittent suppuration.

Ethmoid:

1. Continuation of discharge.
2. Continuation of pain.
3. Partial occlusion of nostril.
4. Ocular symptoms not present before operation.

And he ends up with the statement that, "Experience has certainly taught that radical operation on the accessory sinuses does not always spell radical cures." With the radical procedure no better recommended than this by a man of the prominence and experience of Dr. Skillern, and others of similar equal experience, I am convinced that I am justified in persisting with the intra-nasal method. The reasons as far as I am able to learn are: First, closure by circulation of the artificial opening; second, lack of persistence in following up after-treatment; third, too extensive degeneration of bony walls; fourth, sinuses too large to drain through the openings made or having too big a secreting surface, due to size and many septa, etc.

The fault, in other words, is not so

much in the method used as in lack of persistence in the follow up work and after-treatment in keeping down gradations, keeping the openings patent, etc.

Perhaps some of these cases of mine could be cured now by the radical external method, but eighty-five per cent were cured by the intra-nasal method—half of those not cured could be cured with proper persistent treatment, re-operation, etc. The other five per cent could not be cured by either method and I believe that in two of these cases it would be exceedingly dangerous to attempt the radical operation with extensive curettement of the sinus lining. It might not mean just failure to cure, but death, for in one case the suppurative process has extended so far that there is no longer much bony substance beneath the membrane. The membrane is boggy, many times the normal thickness and more like a sponge than a membrane and wherever pressure is made upon it, pus oozes out and resistance of the bone beneath is not felt. This case came to me about seven years ago with polypi completely obstructing both nostrils and even protruding out in front so far that they could be grasped with the fingers. All polypi were removed at that time, together with both middle turbinates, ethmoids were curetted away and openings made into both frontals and both antra, and today these openings large enough to introduce a pencil through are still patent, but the suppuration still continues. This patient, however, is well in every other respect, attends to her work regularly and has no systemic effects from this suppuration, and it is my belief that this patient is far better off to come in occasionally for curettement of tiny polypi, which are continually forming, than she would be to submit to a radical operation with all its dangers and perhaps not then be relieved of the discharge by it.

In view of the results I have obtained in the above cases and considering the results reported by others who use the more radical methods, I am still of the opinion that, although the intra-nasal route is not

all that could be expected of it, still it offers with persistent after-treatment, almost the same results as the radical operations do and without the dangers, scarring and other unsatisfactory sequelae often attending the radical procedure.

#### DISCUSSION

DR. E. W. PATTON (Chattanooga): The essayist makes a very good plea in favor of intra-nasal surgery on the accessory sinus, and I quite agree with him part of the way; but for the rest I must disagree. He states that his cases that responded to intra-nasal surgery were those of short duration and no bone involvement. I feel that we are justified in simple cases of infection of maxillary or ethmoid in trying intra-nasal operative procedure first, but I would not say that we should do this "repeatedly" if done thoroughly the first time.

I am quite sure there is more shock and depression to the nerve centers in doing nasal surgery than is ordinarily considered, and for this reason we should not continue to operate at the expense of that patient's nerve force.

As for the frontal sinus, I doubt the wisdom of ever entering it from the nose. Given a case of chronic frontal sinusitis that does not respond to palliative treatment or removal of the anterior tip of middle turbinate or large bulla cells, then I feel to enlarge the opening from the nose can only result in closure by scar tissue eventually, and with the diseased mucous membrane lining the sinus still intact. I recognize the skill and ability of the doctor quoted, but must take issue with him on some points. If the sinus is cleaned out thoroughly there should be neither pain nor discharge following, and all the other points mentioned are due to accidents, let us call it, in operating.

The hardest question for me to decide is when, and when not, to resort to so-called radical surgery. I feel that we should keep an open mind for the operation suited to the particular case, and I do not see why there should be any argument against radical procedure. I feel sure there are many cases in which it would be very unwise to waste time with intra-nasal surgery.

DR. ROBERT G. REAVES (Knoxville): I agree with most of what Dr. Lawwill has said. I am converted to the intra-nasal operation for sinus work. When I was in Boston I assisted a man who did a great deal of radical work externally. While I was there I did a good deal of intra-nasal work, and am still doing it. It is not easy—it is hard. There is nothing harder than to look into the small opening of the nose with one eye and do a really thorough sinus operation. You can go in and break down the cells with a curette and take off the turbinate and get out

quickly. But you have not completed your operation, and the chances are you will not cure your patient.

In using a local anaesthetic I always inject Meckel's ganglion through the posterior palatine canal. It is easily done with a good gold needle. You can do it by the Sluder route, but you cannot always get in there, and in going in you may have to go through infected tissue. In getting the anaesthetic anteriorly I inject along the nasal process of the maxilla. By infiltrating the tissues there you get good anaesthesia. Another way I have used is to inject the nasal nerve in the orbit. If you inject Meckel's ganglion and anteriorly you have an anaesthesia that permits you to do what you please. A good anaesthetic is necessary to do a sinus operation, any way you want to take it. I follow the procedure of my brother in Greensboro.

Dr. Shea brought out the point of starting at the posterior ethmoid and working forward. I follow that. I always open the maxillary under the inferior turbinate. I get a large opening, and seldom have to reopen.

The end results are what we are after. The doctor states that 85 per cent of his cases he considers cured. A cure depends much upon the type of case you are operating on. It may be to relieve pain (which we do in hyperplastic cases), or for suppuration where all the sinuses are involved, or to get rid of polypoid tissue. Suppuration and polypoid tissue cases are the hardest of the three on which to get a good result. In sixty-five cases we have had in 1921, 1922 and 1923, we have about eight cases that we do not classify as cured. The rest of them say they are cured. Many of those, however, have been of the hyperplastic type, in which relief of pain was sought. The chronic suppurative type, of course, are difficult, but if the patient has had considerable discharge and headaches and you relieve the headaches and lessen the discharge seventy-five per cent, the patient feels he is cured. We have a few of these that still have discharge, but they have no headache, and they are satisfied. Other cases I have seen clear up entirely. Some still have headaches more or less. I think we must remember that where the sinuses have been diseased several years and you remove the ethmoid, not injuring the mucous membrane of the roof or the orbital wall, not curetting it off but opening up the sinus, then it may take two years for that mucous membrane to get back to a healthy condition.

DR. REESE PATTERSON (Knoxville): I enjoyed the doctor's paper, which is really a plea for conservative intra-nasal surgery, and I think it is very timely.

The doctor referred a good many times to Dr. Skillern. I had the pleasure of working with Dr. Skillern for six months in 1921, and I know his

position about radical surgery. At one time he was very radical. I suppose he has done more radical Kilians than any other man in the country. I assisted in doing five in 1921 and I followed some of them in 1922, but a good many of them were tragedies.

The doctor spoke of going into the nose causing stricture. I think you may have that trouble in any operation. In a radical Kilian you would be surprised to see how many completely close up, or are small and give the patient constant trouble. I believe, as I see the result of radical surgery, that I would be better satisfied with smaller measures. The Caldwell-Luc-Denker operation may be all right sometimes, but you do not always get results you want, and I believe we will serve our patient's interests better by fewer radical operations, and when we do resort to it, let it be a case of conservation of life.

I think we should look after the general physical condition of these patients more. I believe there is a great deal of shock in connection with chronic disease of the nose, and I am making it a practice now to look after the dietary of my patients, giving them cod liver oil with malt, and I am getting satisfactory results and helping them to get back on their feet.

DR. LOULIS LEVY (Memphis): I thought when I saw the title of this paper that Dr. Lawwill was going to tell us something that would really aid us in regard to end results. Only recently I had the privilege of seeing two cases that had been operated on, and the sphenoid in both had closed; but by biting out the granulation tissue we relieved the pain.

I think we are all conservative; I do not think we try the radical operation first. A radical oper-

ation has its place only when everything else has failed. However, in Dr. Lawwill's case, which he reports, I can see why in taking the polyps out this pus continues. Recently Dr. Lynch held a clinic in Memphis and demonstrated while doing an operation why we still have this discharge. If one studies the anatomy of the ethmoid cells you will frequently find cells away to one side which cannot be reached with ordinary curettage or any other method except a radical. To my way of thinking Dr. Lynch's operation as a radical for frontal and ethmoid is far better than a Kilian.

In antrum work we operate intra-nasally first, and if we find a bunch of polyps within the antrum we tell the patient we do not think the intra-nasal operation will suffice. Where you make the opening large enough in these cases the aeration will sometimes help promote a cure. After all in sinus cases the proper ventilation of the cells often produces the results you are after.

DR. STEWART LAWWill (closing): I have been very much interested in sinus work for several years, and have made a particular study of the end-results, not only of my own cases but also of those of the other operators, and I do not believe that if I had suppurating frontals and ethmoids that I would want an extremely radical operation like Dr. Lynch's done upon me. If I were relieved of the pain, I believe that I would rather have the suppuration than the operation. In view of the fact that eminent men like Dr. Skillern have gone back recently to the conservative point of view, I still feel that I am right; however, I am of open mind and may live to be convinced that I am wrong. In the meantime, I do not feel justified in advising for my patients what I would not be willing to submit to myself.

**Note Change in Date of Meeting to**  
**April 21, 22, 23, 1925**  
**Nashville**

# THE JOURNAL

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Devoted to the Interests of the Medical Profession of Tennessee

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J. F. GALLAGHER, M.D. -----Editor

R. C. DERIVAUX, M.D. -----Associate Editor

FEBRUARY, 1925.

## EDITORIAL

### THE COMING MEETING.

The ninety-second annual meeting of the Tennessee State Medical Association will be held in Nashville, **April 21, 22 and 23**. The Nashville Academy of Medicine, through its local committee on arrangements, is actively at work and is making every preparation for the success of the meeting. The historic Hermitage Club has been selected as the place of meeting. This building is better adapted to the needs of the Association than any other building in Nashville, and it will be recalled that the facilities furnished there made the ninetieth session one of the most successful in the history of the Association.

The clinical feature, which has been made a part of the Association's program, will be retained, but in a modified form. The program committee has decided upon devoting the morning of the second day to "dry clinics." These are to be concentrated in one hospital and to consist of diagnostic clinics, laboratory demonstrations and the exhibition of patients showing end results. This type of practical work has proven to be highly profitable in other medical meetings, and it is confidently hoped that it will be no less at our meeting. Obviously the major part of this feature of the program will have to be carried out by the Nashville profession, but if there are any others who wish to participate in this part of the program by the presentation of cases or clinical demonstrations, they will be gladly received and ample provisions will be made for their needs.

The number of papers listed on the program at this writing are relatively few and anyone desiring to write a paper can find a place on the program provided he sends to this office the title of his paper at once. In sending in the title, a short abstract of the paper should be included. Also, if there is a preference as to who shall open the discussion, this should be indicated.

No medical meeting can be a success without the hearty co-operation of its members. It is manifestly impossible for the program committee to personally solicit papers from the membership and so it cannot be too strongly urged that the members take the initiative and send in the titles of their papers of their own volition. **DO IT NOW.**

### THE OVERTON BILL

To those conversant with the activities of the State Legislature, it was no surprise when Senator Overton introduced his bill to lower the preliminary educational requirements for the study of medicine. It was no surprise either when the bill passed both houses of the Legislature, despite the opposition of the Legislative Committee of the State Association. At the present writing the bill is in the hands of the Governor for his signature. Vigorous effort is being made to induce the Governor to veto the measure, but there are some who think that even in the event it is vetoed that the proponents of the bill can muster enough strength to pass it over the veto.

Waiving the point as to whether the present standards requisite for the entrance upon the study of medicine are too high, it is clear to many who have made a study of our medical practice act, and its amendments, that the Overton amendment now pending will not accomplish what its author hopes to accomplish; that is, to allow high school graduates to enter a medical school. Of course, the medical department of the University of Tennessee, by virtue of the fact that it is a State institution, may be forced to accept

high school graduates, but there are few other medical schools in the United States which will accept such standards. So the relief sought will not be so great as, at first thought, may be expected.

What this bill will accomplish, if it becomes a law, is to destroy the reciprocal relations of medical licensure of Tennessee with other states; make Tennessee a dumping ground for graduates of inferior medical schools and reduce the medical department of the State University to a Class B institution. These conditions would be deplorable and it is to be hoped that the bill will fail to become a law.

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## DEATHS

Dr. R. M. Wellborne died January 23rd at his home in Arlington, age fifty-eight.

Dr. William H. Whitelaw died at his home in Memphis January 23rd, age fifty-nine. Dr. Whitelaw retired from active practice several years ago.

Dr. L. A. Copenhagen, of Englewood, died January 1st, age sixty-one. Dr. Copenhagen was a graduate of Lincoln Memorial University of the class of 1891. He served for four years as county physician of McMinn county and was the local surgeon of the Louisville and Nashville Railroad.

Dr. S. D. Terrell, of Memphis, died suddenly, following a heart attack while on a vacation at Biloxi, Mississippi. Dr. Terrell was born in Covington county, Mississippi, in 1871. He received his medical education at Tulane and the Memphis Hospital Medical College, graduating from the latter in 1896. In 1902 he moved to Memphis, where he practiced until the time of his death.

Dr. Marvin J. Kingins, aged twenty-eight, was shot and killed February 7th by a miner near the Columbus Mining

Company's camp at Allais, Kentucky. Dr. Kingins was on a mission of mercy to the miner's child when he was shot from his horse. Dr. Kingins was a graduate of Vanderbilt of the class of 1923 and served his internship at the Knoxville General Hospital. Since the tragedy the murderer has been tried and sentenced to death.

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Dr. Wm. G. Somerville, of Memphis, was found dead in his room in a hotel in St. Louis, January 28th, where he was visiting with his daughter. Dr. Somerville was a graduate of Columbia University College of Physicians and Surgeons, New York, in the class of 1889. After an internship in a New York hospital for a year, and two years in the Alabama Hospital for the Insane he engaged in general practice at Tuscaloosa, Alabama. In 1909 he went abroad, spending eighteen months in post graduate study in Europe. In 1910 Dr. Somerville located in Memphis, where he practiced his specialty until the time of his death. Dr. Somerville was consulting neurologist during the World war, both here and in Europe, attaining the rank of Lieutenant Colonel. Dr. Somerville had a national reputation as a neurologist and was well and favorably known by a large circle of friends and physicians who deeply regret his sudden and untimely death.

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## MEDICAL SOCIETIES

### ANNOUNCEMENT

Dr. John R. Caulk, of St. Louis, chairman of the Committee of Arrangements, announces that the American Urological Association, the largest national urological association, will meet in St. Louis, May 21, 22 and 23, with headquarters at the Chase Hotel. A general invitation is extended to those interested to attend. The mornings will be devoted to clinics in the various hospitals and the afternoons to scientific sessions.

Officers in the Dyer County Medical Society are Dr. W. W. Holland, Dyersburg, president; Dr. W. O. Sullivan, Newbern, vice-president; Dr. Lyle Motley, Dyersburg, secretary-treasurer.

The following were elected officers of the Bradley County Medical Society at a recent meeting of the society: Dr. R. L. Bean, Cleveland, president; Dr. J. F. Gilbert, Cleveland, vice-president; Dr. H. W. Harris, Cleveland, secretary-treasurer.

Marshall County Medical Society have elected the following officers to serve during 1925: Dr. F. H. Gault, Cornersville, president; Dr. J. B. White, Lewisburg, vice-president; Dr. J. A. Hardison, Lewisburg, secretary; Dr. S. T. Hardison, Lewisburg, treasurer.

Officers for the Sullivan-Carter-Johnson Society have been elected as follows: Dr. J. L. Cottrell, Elizabethton, president; Drs. D. A. Swift, P. S. Williams and R. T. Childress, vice-presidents; Dr. Nat H. Copenhaver, Bristol, secretary-treasurer and delegate to State convention.

The following officers were elected for the Hickman County Medical Society for the ensuing year: Dr. J. B. Webb, Goodrich, president; Dr. John S. Beasley, Centreville, vice-president; Dr. W. K. Edwards, Centreville, secretary-treasurer.

## NEWS NOTES AND COMMENT

Dr. W. S. Nash, of Knoxville, is spending the winter in Florida.

Dr. R. K. Galloway has moved from Coldwater to Erwin.

Dr. H. J. Kelso, of Knoxville, has gone to Florida for a vacation.

The Mayo Foundation has awarded a fellowship in surgery to Dr. R. B. White, of Jackson.

Dr. H. T. McClain, of Knoxville, is taking a post-graduate course in surgery at the New Orleans Polyclinic.

Dr. W. A. Thomison, of Dayton, has been awarded a three-years' fellowship in surgery by the Mayo Foundation at Rochester.

The Tennessee-Kentucky Section of the American College of Surgeons was held in Louisville, February 16 and 17. Tennessee had an unusually large representation at the meeting.

Dr. H. A. Morgan, president of the University of Tennessee, addressed the Knox County Medical Society, February 17, on "The Needs of the Medical Department of the University of Tennessee."

## MISCELLANEOUS

### MEDICAL EDUCATION AND MEDICAL SERVICE

The difficulties in medical service in the cities are seen in the way our young men are seeking the special careers, says William Allen Pusey, Chicago (*Journal A. M. A.*, Jan. 24, 1925). The great expression of this fact is the way our present graduates show a preponderant tendency to go into the specialties. They are not going into general practice. The situation in the cities is not acute, because the supply of physicians of the older generation leaves for the present enough of that generation to meet the demands of general practice. But it is evident that, unless we can do something to change the trend, the time is not far distant when the problem of the general practitioner as we have always known him—the family doctor for the man of ordinary means—will be a serious one even in the cities. Another expression of the fact is the new difficulties in getting men to fill official government positions that would naturally be filled by medical men when they are available. We are now compelled to look outside the profession to fill many positions having to do

with medicine. The evidence is accumulating that we are producing only a very costly sort of physician and are not now producing men to do the ordinary service of medicine for ordinary people in the cities or the country. With about 25,000,000 potential income tax payers in the country, 6,662,126 paid in 1921. The ordinary people are certainly over half of our entire population, urban as well as rural; so that the question of medical service for ordinary people is the biggest problem we have. Strong evidence is accumulating of the impending, and in places actual, breakdown of our present form of rural medical service. He wrote to the secretaries of the state medical societies asking whether the older generation of physicians in the rural districts is being sufficiently replaced to meet the future needs of these districts. Thirty secretaries of state societies answered No. Four secretaries of state societies (Florida, Minnesota, North Carolina and Rhode Island, the latter having no rural districts) answered Yes. Reports from different sources show that medical practitioners in the country are not being replaced in approximately 90 per cent of the states. If this condition of affairs should continue for a generation, it would mean that the rural districts would be without competent medical service. Unescapable evidence of the developing shortage in rural practitioners is shown by the average age now of country physicians. It is above 50 years for the whole country. In many parts of the country the people are already getting medically helpless. They are running to all sorts of irregular practitioners. Nurses are taking on the functions of physicians, and in many places we are encouraging this. The worst aspect of the situation is in connection with infant care and childbirth. The subject is a topic of investigation by medical societies, of official and other addresses, of conferences. It appears in medical journals in advertisements for a doctor in this community or that, in news notes, in telegrams to the public

press. In offering voluntary subsidies and passing laws to allow towns to tax themselves for the support of a needed doctor. Are we, with our eyes open to the obstetric situation as it is developing, ready to turn over childbirth in the rural districts to midwives? Could there be a more sobering matter for our consideration than that midwives are becoming the only reliance in childbirth of half of the community, in many parts of the country where the practice was hitherto unknown; that we are in our following of European standards of medical education, reverting to European peasant conditions in the practice of midwifery in a very considerable part of our self-respecting population? Such facts cut right to the core of our duties in social service. They demand correction, if correction is within our power. They outweigh immeasurably any ideals of medical culture as such, if these ideals can be attained only at such sacrifice.

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#### PERIODIC PHYSICAL EXAMINATION

If there is any procedure that represents the apotheosis of the application of preventive medicine, it is the periodic physical examination. This is the most efficient method that modern medicine has for determining the ability of the individual human being to continue his life in such a manner that he may reach the age to which the tables of life expectancy indicate he is entitled. It is not surprising, then, that the idea has received the spontaneous and wholehearted approval of all the nonmedical agencies to which it may have been broached. Life insurance companies have recognized the commercial asset embodied in a wholesale adoption by the public of this method of detecting in their incipience some of the chronic diseases that have represented the greatest cost to these concerns. Social health agencies have found that the application on a wide scale of periodic physical examinations will secure a decreasing cost in the care of the indigent sick. More-

over, practically every medical organization has given the extension of periodic examination to the public complete endorsement.

The House of Delegates of the American Medical Association, stimulated particularly by the far-sighted policy of its leaders, was among the first to urge consideration of this problem, and the various councils and bureaus of the Association were empowered several years ago to complete plans for extending the matter to the medical profession and for carrying a systematic campaign of education to the public. As a result, blanks have been prepared on which the results of such examinations may be recorded and compared from year to year. Such blanks already have been issued in thousands, and copies of a small booklet outlining the value of the procedure and the manner in which it is to be carried on have been sent to physicians who desired them.

It is significant that every one concerned in the campaign of education for periodic physical examination and in extending this epoch-making method to the public has realized that it is a matter that depends for its success entirely on the extent to which organized medicine, as represented by the Fellows and members of the American Medical Association in the county and state societies, takes up the work. Practically every scheme for putting the system into effect on an extensive scale has attempted to utilize the machinery of the American Medical Association for this purpose. Such at-

tempts have included not only the work of individual life insurance companies but also that of self-constituted so-called philanthropic corporations, of commercial institutions which planned to conduct examinations as a profit-making scheme, of various medical organizations consisting of groups within the whole of organized medicine, and, finally, of philanthropic health organizations which have a leaning toward "state medicine."

As has been mentioned previously in The Journal, some of the county societies and some of the constituent state associations within the American Medical Association have taken up the campaign for periodic physical examinations in a systematic and intense manner which has yielded noticeable results. On the other hand, a large majority of physicians in the United States do not yet seem to have awakened from the state of apathy that seems to prevail among them in regard to this project. There are not lacking, as has been mentioned, commercial and self-seeking organizations to take up this matter for personal gain and aggrandizement, if the organized medical profession will not recognize its opportunity in promoting this conception to the utmost. The headquarters office of the American Medical Association is ready to cooperate fully with any of the constituent bodies that request such aid. Let us not be found lacking in supplying to the intelligent citizens of our country a service which the progress of medical science and the education of the public have taught them to demand.—*Jour. A. M. A.*, Nov. 29, 1924.

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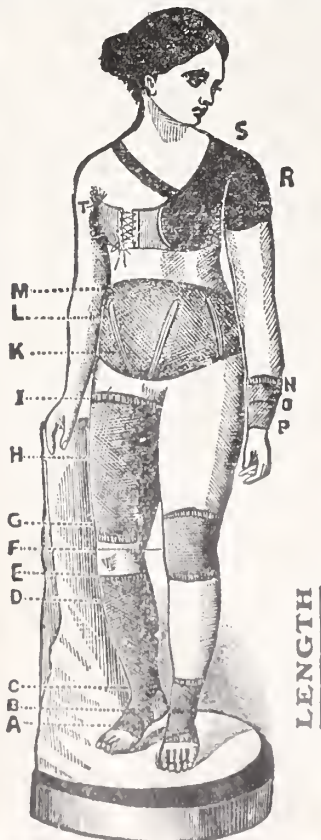
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# ***THE JOURNAL*** ***OF THE*** ***TENNESSEE STATE MEDICAL ASSOCIATION***

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

*ISSUED MONTHLY, under Direction of the Trustees*

J. F. GALLAGHER, M.D., Editor and Secretary

OFFICE OF PUBLICATION, 420 JACKSON BLDG., NASHVILLE, TENNESSEE

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Volume XVII

NASHVILLE, TENN., MARCH, 1925

Number 11

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NASHVILLE, TENNESSEE—THE SOUTH'S LEADING CENTER OF INDUSTRY AND PROGRESS

JOHN M. NELSON, Assistant Secretary, Chamber of Commerce.

**N**ASHVILLE, TENNESSEE, located in the center of the great Middle Tennessee Basin, is today the South's leading city in progress, industry and education, and on all sides there is shown the evidences to bear out the claims of the Nashvillians that the eyes of the country are turning to Nashville.

New buildings are rising on every hand; office buildings, hotels, manufacturing plants, industrial centers, residences, apartments, public buildings, hospitals, school facilities and, in fact, every line of commercial, residential and other improvements are to be noted. In the heart of the business district new skyscrapers are rearing



STATE CAPITOL

their heads, business houses are being enlarged and improved, factories are being erected in the factory districts, new streets are being installed in many sections and Nashville generally is in the clutches of an era of improvement and expansion.

Nashville, according to the census figures of 1920, was given a population of 118,342. The estimated population given out by the government in 1924 placed Nashville's population at 140,010. For eighteen years the city limits of Nashville have remained unchanged. During that time the residential district of the city has extended far beyond the old lines. The Richland section, Belmont Heights, Gallatin and Inglewood sections and other densely populated districts have not been taken into the corporation, but if these are included the figures of Nashville would go far above the 150,000 mark.

Nashville, as it stands today, covers an area of 18.2 square miles within its city limits. If the proposed increase in the corporation limits is made, the city will consist of approximately 25 square miles. The

city has 360 miles of streets, 226 miles of water mains, 163 miles of sewers, 102 miles of street railway, 25,000 telephones, forty-three hospitals and charitable institutions, and every facility for the needs and desires of its residents.

There are twenty-two parks and playgrounds in Nashville, containing 468 acres, and in Shelby Park, a beautiful natural park, there is a nine-hole municipal golf course that is one of the finest in the country. In addition, there are seven private clubs, with wonderful golf links, tennis courts and other playgrounds. The Vanderbilt Stadium, the largest in the South, has a seating capacity of 22,000 people. Nashville has 231 churches and three new ones are under construction. Nashville is an ideal home city from every standpoint.

#### INDUSTRIAL NASHVILLE.

The DuPont Fiber Silk Company has just located a new \$4,000,000 silk fiber plant at Old Hickory, near Nashville, and is now employing 1,500 men and women and has just announced that it will double its plant. Several new industries are now



THE HERMITAGE. LAST RESIDENCE AND BURYING GROUND OF PRESIDENT ANDREW JACKSON.



MAIN BUILDING, VANDERBILT UNIVERSITY.

practically assured for Old Hickory and this will soon be an industrial city in itself. Nashville is the home of the self-rising flour industry and makes more of this flour than any other city in the world. It also manufactures all other grades of high-class flour and is the wheat-grinding city of the South. Nashville is the largest hardwood flooring market in the South and one of the two largest in the world. It is also the largest commercial fertilizer manufac-

turing point in the South, has more square feet of cold storage than any other city in the South, is the South's largest egg-shipping and poultry center, has a new cement plant with a capacity of 2,500 barrels daily, has approximately \$3,500,000 invested in the meat-packing industry, and more than 35,000 pounds of green coffee are roasted annually by Nashville concerns. Nashville has more than 500 manufacturing plants, twenty-three wholesale grocery concerns,



SOCIAL-RELIGIOUS BUILDING, GEORGE PEABODY COLLEGE FOR TEACHERS



PARTHENON, CENTENNIAL PARK. THE ONLY EXACT REPRODUCTION OF THIS ANCIENT GREEK TEMPLE IN THE WORLD

is the candy manufacturing center of the South, has seventeen wholesale dry goods and notion houses, and about 1,500 traveling men work out of this city each year.

As a manufacturing, industrial, wholesale and retail center, Nashville cannot be surpassed by any city in the South.

#### EDUCATIONAL CENTER.

Long termed "The Athens of the South," Nashville can now boast of being one of the leading educational centers of the entire country. Located in Nashville, Vanderbilt University with six departments, academic, medical, dental, law, engineering, arts, science and religion, is the South's leading educational center. It has an endowment of \$6,850,000 and assets of more than \$13,000,000. It now has under construction a medical school and hospital that, when completed, will represent an investment of more than \$3,500,000, and will be the most complete medical school in the South and one of the most complete in the entire country. This university ranks at



PRESIDENT JAMES K. POLK'S TOMB, CAPITOL GROUNDS.

the top of the country's leading institutions of education.

In addition to Vanderbilt, Nashville has Peabody College for Teachers, with an investment of over \$4,000,000 and an endowment of \$2,500,000; Ward-Belmont College for Young Women, one of the most noted female schools in the United States and with students representing practically every state in the Union and several foreign countries; St. Bernard and St. Cecilia Acad-

emies, two of the outstanding educational institutions of the Catholic Church; the Southeastern School of Printing, another exclusive school for the South is located here. Fisk University and Meharry Medical College, two of the three exclusively negro schools to be recognized by the United States Government, are located in Nashville, as is also Walden University, the Tennessee Agricultural and Industrial

of education that may be desired. One of the boasts of the city of Nashville is that a child can start in the kindergarten and complete his or her education, receiving almost any degree desired, without leaving the city of Nashville. Each year the city has a non-resident student body of over 9,000, and they spend annually in Nashville more than \$5,000,000. The educational institutions of Nashville, as a whole, have



STREET SCENE IN NASHVILLE. LOOKING EAST FROM SIXTH AVENUE ON UNION STREET.

Normal, Roger Williams and two Negro Baptist Theological Seminaries, all Negro institutions. Several high-class business colleges are also in this city.

The public school system of Nashville cannot be surpassed anywhere. The city has thirty-nine public schools, with 519 teachers and 23,000 students enrolled. In addition, forty-eight private schools are located in this city, thus assuring any class

assets of more than \$23,000,000.

#### HISTORICAL POINTS.

Located a short distance from Nashville is the Hermitage, the home of Andrew Jackson, second only to Mt. Vernon in sacredness in the hearts of the American people. This old home is one of the show spots of the world and annually thousands of visitors visit this shrine, that is main-

tained just as it was in the days of Old Hickory.

The only replica of the Parthenon to be found in the world is located in Centennial Park, and at this time is a special point of interests, as artists and sculptors are now engaged in replacing the statuary on the building and remodeling it to be as near an exact duplicate of the old Parthenon as is possible. The State Capitol, one of the most magnificent and imposing buildings to be found in the country, is another of Nashville's show places. Standing on the Capitol Hill will be found the tomb of James K. Polk, a former President of the United States, and a wonderful equestrian statue of Andrew Jackson. Five Nashville men have been in the United States Supreme Court, these being John Catron, Howell E. Jackson, Horace H. Lurton, J. C. McReynolds and E. T. Sanford, the latter being a member of that august body at this time. William Walker, the "Grey-eyed Man of Destiny," the most famous of American filibusters, was born and raised in Nashville, and William Driver, who named the American flag "Old Glory," is buried in the old city cemetery.

The battle of Nashville, one of the major engagements of the Civil War, was fought partially within the city limits of Nashville, on December 15 and 16, 1864. Several of the old relics of this battle are to be seen in

and near Nashville, including old Fort Negley and other points of interest. The National Cemetery, where the Federal soldiers who lost their lives during the war are buried, is located near this city.

Nashville is the agricultural and live-stock center of the South. In the past five years Nashville's butter-making industry has grown from practically nothing to 4,500,000 pounds annually. This city is the grain dealing center of the South and one of the most complete systems of elevators to be found in the South is in Nashville. Davidson County, of which Nashville is the county seat, raises seventy-seven different kinds of grain and fifty different kinds of fruit. In fact, if Nashville should be enclosed within a wall and include a radius of twenty-five miles, Nashville and the territory included could live in ease and comfort and raise and manufacture everything needed to eat or wear.

Cities are not mere streets and buildings, brick and mortar, or even factories and homes. These material, tangible things are but the background for the people who live and work therein. A great city is built of intangible things, the spirit of its people, their will to do, their loyalty, their pride, their enthusiasm, their energy, their spirit of co-operation. These are the things that mold and shape material things, and Nashville has each of these qualities.

# PRELIMINARY PROGRAM

## Ninety-Second Annual Session

### TENNESSEE STATE MEDICAL ASSOCIATION

Nashville, April 21, 22, 23, 1925.

#### NIGHT SESSION, 8:00 P.M.

**Tuesday, April 21**

- 1 Presidential Address. Title to be announced, Frank D. Smythe, M.D., Memphis.
- 2 Periodic Health Examination and the American Medical Association. W. D. Haggard, M.D., President-elect, Nashville.
- 3 Recent Advances in Neurological Surgery. (Lantern Slides), Joseph E. J. King, M.D., New York City.

#### FIRST GENERAL SESSION, 9:00 A.M.

**Tuesday, April 21**

- 1 Some Personal Experiences in Parathyroid Therapy, W. K. Sheddan, M.D., Columbia.  
To open discussion, J. A. McIntosh, M.D., Memphis.
- 2 Traumatic Synovitis of the Knee, Henry Cox, M.D., Nashville.  
To open discussion, Henry G. Hill, M.D., Memphis.
- 3 Leukemia. (Lantern Slides), W. T. DeSautelle, M.D., Knoxville.  
To open discussion, J. B. McElroy, M.D., Memphis.
- 4 Abdominal Pain, Bernard Gaston, M.D., Lebanon.  
To open discussion, Benj. I. Harrison, M.D., Knoxville.
- 5 The Functions of the Liver, Robert Caldwell, M.D., Nashville.  
To open discussion, Bryce W. Fontaine, M.D., Memphis.
- 6 Case Reports, P. H. Faucett, M.D., Columbia.  
To open discussion, E. M. Holder, M.D., Memphis.

- 7 Pneumothorax, Roentgenographically Considered (Lantern Slides), Franklin B. Bogart, M.D., Chattanooga.  
To open discussion, W. R. Bethea, M.D., Memphis.
- 8 Newer Intestinal Surgery, Wm. M. McCabe, M.D., Nashville.  
To open discussion, Frank Ward Smythe, M.D., Memphis.
- 9 Sacral Anesthesia. Watt Yeiser, M.D., Columbia.  
To open discussion, E. P. Baird, M.D., Dyersburg.
- 10 Preoperative Factors Influencing the Mortality of Prostatectomy, John E. Hall, M.D., Nashville.  
To open discussion, Tom A. Barry, M.D., Knoxville.
- 11 The Status of Prostatectomy, Lyle B. West, M.D., Chattanooga.  
To open discussion, W. A. Bryan, M.D., Nashville.

#### SPECIAL ORDER, 2:30 P.M.

**Tuesday, April 21**

- 12 Sinusitis and Swimming, A Further Observations of Etiologic Factors, H. M. Taylor, M.D., Jacksonville, Fla.
- 13 Stricture of the Ureter as a Cause of Irritable Bladder, George R. Livermore, M.D., Memphis.  
To open discussion, C. F. Anderson, M.D., Nashville.
- 14 Ureteral Duplication, With Report of Case (Lantern Slides), Perry Bromberg, M.D., Nashville.  
To open discussion, G. Victor Williams, M.D., Chattanooga.
- 15 A Medical Impasse, O. J. Porter, M.D., Columbia.  
To open discussion, K. S. Howlett, M.D., Franklin.

**SPECIAL ORDER 2:00 P.M.****Wednesday, April 22**

- 16 Some of the Attributes of the Human Mind, John W. Barksdale, M.D., Jackson, Miss.
- 17 A Review of the Fractures of the Newell & Newell Sanitarium for the Past Four Years, E. Dunbar Newell, M.D., Chattanooga.  
To open discussion, Jere Crook, M.D., Jackson.
- 18 Undescended Testes, James W. McClaran, M.D., Jackson.  
To open discussion, T. G. Pollard, M.D., Nashville.
- 19 Visceral Reflexes in Diagnosis, R. B. Wood, M.D., Knoxville.  
To open discussion, O. S. Warr, M.D., Memphis.
- 20 Ectopic Pregnancy, L. L. Sheddan, M.D., Knoxville.  
To open discussion, Percy Wood, M.D., Memphis.
- 21 Congenital, Infantile Hypertrophic Stenosis of the Pylorus, J. G. Eblen, M.D., Lenoir City.  
To open discussion, R. A. Barr, M.D., Nashville.
- 22 Gun Shot Wounds of the Abdomen, Murray B. Davis, M.D., Nashville.  
To open discussion, M. W. Searight, M. D., Memphis.
- 23 Embryonal Adenosarcoma, Report of Case, Tom Barry, M.D., and Ralph Monger, M.D., Knoxville.  
To open discussion, Buist Litterer, M.D., Nashville.
- 24 The Use of Tryparsamide in the Treatment of Neurosyphiis, E. W. Cocke, M.D., Bolivar.  
To open discussion, J. W. Stevens, M.D., Nashville.
- 25 Observations During the Use of Tryparsamide in a Series of Cases, A. B. Dancy, M.D., Jackson.  
To open discussion, R. J. Warner, M.D., Nashville.
- 26 A Plea for the Education of the Deaf Child, P. M. Farrington, M.D., Memphis.  
To open discussion, Williard Steele, M.D., Chattanooga.
- 27 Para-Nasal Sinus Disease, M. M. Cul-  
lom, M.D., Nashville.  
To open discussion, Vincent D. King, Memphis.
- 28 Otitis Media, H. E. Christenberry, M.D., Knoxville.  
To open discussion, J. W. Wilks, M.D., Columbia.
- 29 The Things That Count, C. P. Fox, M.D., Greeneville.  
To open discussion, G. C. Savage, M.D., Nashville.
- 30 Idiopathic Multiple Hemorrhagic Sarcoma (Kaposi), Howard King, M.D., Nashville.  
To open discussion, S. S. Marchbanks, M.D., Chattanooga.
- 31 The Diagnosis of Exophthalmic Goiter, Willima C. Chaney, M.D., Memphis.  
To open discussion, C. N. Cowden, M.D., Nashville.
- 32 First Aid to Injured Eyes, W. W. Potter, M.D., Knoxville.  
To open discussion, E. B. Cayce, M.D., Nashville.
- 33 The Management of Diabetes of Lesser Degrees of Severity, R. C. Derivaux, M.D., Nashville.  
To open discussion, E. R. Zemp, M.D., Knoxville.
- 34 Lantern Slide Demonstration of Radium Therapy, Shields Abernathy, M.D., Memphis.  
To open discussion, C. M. Hamilton, M.D., Nashville.
- 35 Treatment of Spastic Cerebral Paralysis, J. S. Speed, M.D., Memphis.  
To open discussion, R. W. Billington, M.D., Nashville.
- 36 Osteomyelitis, Henry G. Hill, M.D., Memphis.
- 37 Tic Douloureux, C. S. McMurray, M.D., Nashville.  
To open discussion, J. H. Revington, M.D., Chattanooga.

The morning of the 22nd will be devoted to Dry Clinics. It is hoped to make these as broad in scope as possible. The Clinics will be concentrated in Vanderbilt Hospital and will be conducted from 8:30 A.M. to 12:30 P.M.

## EYE, EAR, NOSE AND THROAT SECTION

**Monday, April 20**

9:00 A.M.—Clinics, St. Thomas Hospital, 20th and Hayes Street.

1:00 P.M.—Luncheon at the home of Dr. Herschel Ezell, Belle Meade Park.

Afternoon: Golf and Sight Seeing.

6:30 P.M.—Dinner by Nashville Physicians of the Section, Hermitage Club.

8:00 P.M.—Night Session, Assembly Room, Lambuth Building.

Sinusitis and Swimming, Further Observations of the Ethologic Factors, H. M. Taylor, M.D., Jacksonville, Fla.

A Paper with Demonstration of the Use of the Slit Lantern, Arthur J. Bedell, M.D., Albany, N. Y.

## TUESDAY, APRIL 21, 8:30 A.M.

1 Chairman's Address, W. G. Kennon, M.D., Nashville.

2 Results of Tonsillectomy and Adenoidectomy, D. Harbert Anthony, M.D., Memphis.

To open discussion, W. W. Potter, M.D., Knoxville; Eugene Orr, M.D., Nashville.

3 When to Do a Simple or Radical Mastoidectomy, Stewart Lawwill, M.D., Chattanooga.

To open discussion, J. W. Caldwell, M.D., Nashville; C. D. Blassingame, M.D., Memphis.

4 Present Day Operations for Chronic Glaucoma, A. C. Lewis, M.D., Memphis.

To open discussion, Herschell Ezell, M.D., Nashville; Williard Steele, M.D., Chattanooga.

5 Some Mechanical Problems in Connection with Foreign Bodies in Lungs and Esophagus, Report of Cases, Reese Patterson, M.D., Knoxville.

To open discussion, Hilliard Wood, M.D., Nashville; Richmond McKinney, M.D., Memphis.

6 Traumatic Eye Injuries, With Report of Cases, R. H. Newman, M.D., Knoxville.

To open discussion, E. C. Ellett, M.D., Memphis; Robert Sullivan, M.D., Nashville.

7 Intra-Nasal Sinus Operation With Special Reference to Nerve Blocking and After Treatment with Ultra-Violet Light, Robert Reeves, M.D., Knoxville.

To open discussion, Leslie, Bryan, M.D., Nashville; E. White Patton, M.D., Chattanooga.

## TENNESSEE STATE ASSOCIATION OF RAILWAY SURGEONS

**Monday, April 20, 1925, 8:30 A.M.**

1 Minor Head Injuries, K. S. Howlett, M.D., Franklin, Tenn.

2 Amputations in Industrial Surgery, W. S. Anderson, M.D., Memphis, Tenn.

3 Subject to be announced later, Wm. Britt Burns, M.D., Memphis, Tenn.

### Afternoon Session, 2:00 P.M.

4 Subject to be announced later, S. Crockett, M.D., Nashville, Tenn.

5 Review of Improved Treatment of Certain Fractures, Duncan Eve, Sr., M.D., Nashville, Tenn.

6 Subject to be announced later, L. M. Woodson, M.D., Gallatin, Tenn.

Special Address, "Arthroplasties," Motion Pictures, Willis C. Campbell, M.D., Memphis, Tenn.

7 Foreign Bodies in the Eye, Willard Steele, M.D., Chattanooga, Tenn.

President's Address, "The Railway Surgeon—A Specialist," Dr. Edward T. Newell, Chattanooga, Tenn.

Editor's Note—The above program is a PRELIMINARY PROGRAM. The papers have been listed in the order of their receipt, and with an effort to give the authors preference as requested to approximate the time the paper is to be read. In making up the program, attention has been given to make it a well-balanced one, and by a study of the above it will be seen that some rearrangements should be made for the permanent program. This will be done with special reference to the papers to be read by the Eye, Ear, Nose and Throat men, most of whom do not remain the entire four days of the session.

## *My Association*

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¶ The Tennessee State Medical Association is my Association. I am one of the sixteen hundred who partake of its benefits and contribute to its success. No other member has a greater right in the organization than I have—and no less. It is operated by no individual or group—nor for any; but for the common good of all of its members. By holding membership in the Association I have become one of the great army of scientific, ethical physicians which has made mine one of the noblest of the professions. But as it is my privilege to belong it is my obligation to sustain.

¶ No man is so great that he can become all-sufficient unto himself. Communion with others is an inherent instinct—and a man is just as strong as his friends. Misunderstanding is often a matter of geography; suspicion, jealousy and hatred rarely exist where propinquity prevails. Friendly intercourse begets understanding and contact with our professional confreres broadens the vision. These are inevitable precursors of wisdom and charity.

# OFFICERS Tennessee State Medical Association.

M. A. BEASLEY, M.D.  
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## BLASTOMYCETIC DERMATITIS\*

## A CASE REPORT

MILTON M. COPLAN, M.D., AND A. BUIST LITTERER, M.D., Nashville

**B**LASTOMYCETIC dermatitis is the name given by Gilchrist, in 1894, to a chronic infectious disorder due to a yeast fungus, characterized by a suppurative and granulomatous process affecting the skin.

## HISTORICAL DATA

Busse seems to have published the first case in which yeast or blastomyces was connected with disease. This condition was first noticed in a woman, thirty-one years of age, suffering from tibial abscess. She died one year later and at postmortem numerous nodular formations, somewhat broken down, were found upon the lungs, kidneys, and bones. The yeast was demonstrated from all these lesions, cultivated on media, and when inoculated in rats in pure culture, proved infectious. He called this organism *saccharomyces hominis*.

Several months before the appearance of this paper, Gilchrist exhibited microscopic sections from a case of cutaneous disease which showed peculiar plant forms. This lesion he called blastomycetic dermatitis.

The presence of a papule is generally the starting point of the infection. Suppuration takes place and small quantities of pus are evacuated. Crusts form and the lesion begins to heal. As the original lesion gradually heals with scar tissue, new small foci of suppuration occur at the periphery, and it is then that the lesion is actually spreading.

## CASE REPORT

The patient, a white male, age 33, farmer, living in East Tennessee, came into St. Thomas Hospital, first, on January 3, 1923, complaining of:

- (1) Two sores on left buttocks size of palm of his hand.
- (2) Breaking out on skin.
- (3) A diarrhoea of three years' duration.

A resume of hospital record of first admission follows:

Sores on left buttocks were in proximity to rectum and started in August, 1923, as two small nodules in skin, which soon ulcerated. The patient treated these places with various local applications, but they continued to grow, until on admission to hospital he had a raw, ulcerated, pus-discharging lesion, size of the palm of his hand. An interesting feature was total absence of pain, although area itched considerably. It bled freely, scabs formed only to break down. Family history revealed fact that two sisters of patient were suffering with same malady. They all complained of mouth ulcers in summer months, and in addition patient had suffered with an intermittent periodic diarrhoea for three years. Prior to this trouble he had enjoyed perfect health.

General physical examination was negative, except for this large sore on buttocks, granular polypi in rectum and an inconspicuous papular skin eruption.

Examination of the urine was negative.

White blood cells—10,000.

Blood Wassermann—negative.

Stool examination revealed presence of *ascaris lumbricoides*, *uncinaria americana*, many *amoeba*, many *cercomonas*, hook worm and round worm.

From the skin lesion smears were studied for presence of tubercle bacilli, spirochaetae pallida, and Donovan's bodies. Although there was no record of the bacteriologist's report, the attending physician of the case on first admission stated that a search for actinomyces and blastomyces was made and that the only positive finding was the Donovan's bodies. It was on this basis that a diagnosis of *granuloma inguinale* was made.

The patient was then placed on tarter emetic medication as specific treatment. A dermatological dose of radium was also applied to skin lesion.

The intestinal parasites were attacked with the usual anthelmintics—thymol, emetin hydrochloride, and alcresta ipecac—and on January 29th (date of last stool examination recorded), *amoeba*, *cercomonas* and *ascaris lumbricoides* were still present.

On February 22, 1923, patient left the hospital improved; the sore having been reduced to much less than half its original size. "Consump-

tion of funds" was patient's reason for leaving hospital before wound became entirely healed.

Soon after returning home wound began to break down, and gradually extended over a larger surface.

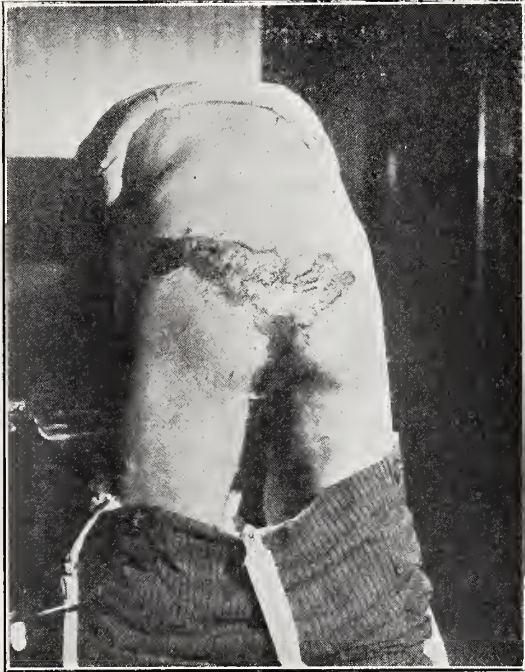


Fig. 1. Blastomycetic dermatitis. Appearance of lesion on admission December 19, 1924.

**THE CASE ON SECOND ADMISSION.** On December 19, 1924, the patient returned to hospital with a large, granulating-surfaced, pus-discharging, foul smelling lesion covering greater portion of buttocks from one posterior superior spine to the other, and extending into the gluteal fold and up to the internal sphincter of the rectum. (See Fig. 1) The lesion was very tender, bled easily, and as a result of extension into rectum, defecation was both painful and difficult. The inguinal glands were involved; those on the left were size of a hazel nut, while those on right presented a chain of nodules about the size of a green pea. They were hard and aspiration was attempted without results.

General laboratory examination of the blood and body excretions showed a W. B. C. of 12,000 3 plus albumin in the urine and amoeba and cercomonas in the stools. These facts were considered negligible for the time, and our entire efforts were devoted to the skin lesion. Subsequently, however, the parasites were attacked with emetin hydrochloride and neosalvarsan, and stool examinations on March 10th were negative to parasitic infection. The albumin gradually disappeared from the urine.

Boric acid solution dressings were applied to the skin lesion for several days to clean it up.

Then a diligent, thorough search for causative organisms was instituted. Smears were made and with an ordinary uterine curette sections of the tissue from the diseased area were removed for study.

**PATHOLOGICAL STUDY.** On December 20, 1924, smears were made on slides from the surface of the skin lesion, to which a 10 per cent solution of potassium hydrate was added to clear the pus. No blastomycetes were found.

On December 22, 1924, four pieces of tissue were curetted. These averaged about 18x11x5 mm., pale reddish yellow and possessed a warty and papillomatous character, with numerous subdermal miliary abscesses. A yellow fluid exuded upon slight pressure. From the under surface of one piece, moist films of pus were spread between cover slip and slide, to which a 10 per cent potassium hydrate solution was added. Under 4mm. objective, many round, somewhat oval bodies containing fine granules and surrounded by hyalin capsules were seen. Many budding forms and pairs united in figure eight forms were present.

Other smears were stained with methylene blue, Gram's and Wright's blood stain, in search of the presence of Donovan's bodies, resulting negatively. Many streptococci, staphylococci, and bacilli were present, indicating mixed infection.

One smear stained for the tubercle bacillus by the Ziehl-Neelsen method resulted negatively.

From the tissue many sections were cut and stained with hematoxylin eosin.

The microscopical appearances of this lesion was very characteristic. There was a marked epidermal hypertrophy, and many of the interpapular projections extended far below the ordinary level. The relationship between the prickle and basal cells was undisturbed. Numerous epider-

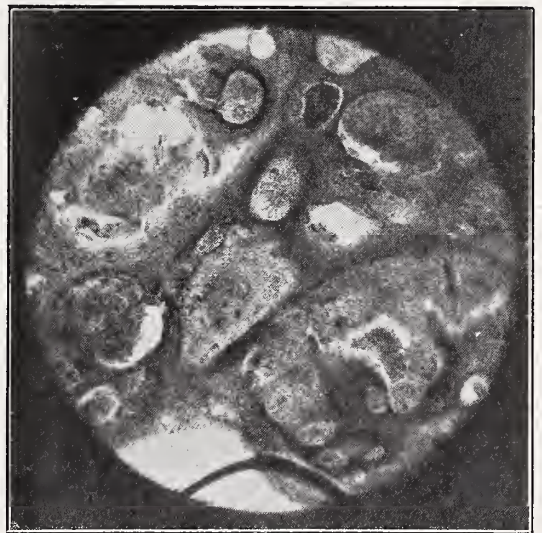


Fig. 2. Blastomycetic dermatitis. Low magnification. Showing epidermal hypertrophy and multiple abscesses, with giant cells.



Fig. 3. Blastomycetic dermatitis. High magnification. Blastomyces in giant cell.

mal abscesses were found between these irregular epidermal downgrowths. These abscesses contained numerous giant cells, serum, fungi, etc. (See Fig. 2) Within many of these giant cells were seen rounded double contoured bodies taking the blue stain with the hyalin capsule unstained. Some showed buds while others united in figure eight forms. (See Fig. 3).

*Differential Diagnosis.*—The disease is to be distinguished from lupus verrucosus, sporotrichosis, syphiloderm, actinomycosis, granuloma inguinale, carcinoma, and eruption due to various drugs, such as bromides and iodides. In lupus verrucosus the lesion rarely reaches the size of that of blastomycosis, occurring in young adults generally. These show other stigmata of tuberculosis and react to tuberculin, but do not respond to the iodide of potassium.

In sporotrichosis, the lesions are most generally subcutaneous abscesses and involve the epidermis secondarily, if at all.

In actinomycosis the final proof rests with the demonstration of the fungus in the discharge. These are generally seen as clumps of mycelium which form granules in the discharge. Where an examination of the discharge has been negative, it is advisable to get sections in order to demonstrate the ray-fungus.

From late syphilides the distinction is not so difficult. Patches are made up of small nodules which tend to ulcerate rather easily. If warty lesions occur, they are of shorter duration and react to mercury, which has no influence on blastomycosis. The blood Wassermann is generally positive.

In granuloma inguinale, the sections show cellular infiltration in the upper corium. The white fibrous tissue and elastin has been replaced by lymphocytes, plasma cells, mast-cells, polymorphonuclear leucocytes, etc. Donovan has found a coccus-like body, singly or in groups, in the manonuclear cells scraped from these lesions which is considered diagnostic. Furthermore, the lymph glands draining the area affected are rarely enlarged.

In fungating carcinoma of the skin, there is more induration of the base of the lesion and involvement of the neighboring lymph glands. Microscopic sections are diagnostic.

Bromide and iodide eruptions may simulate blastomycosis, but wide distribution of the lesion, together with the history, should differentiate these lesions.

*Treatment and Results.*—The laboratory having reported presence of blastomycetes in the lesion, active treatment was commenced. For clearness we shall report the treatment as "Local" and "Constitutional."

*Local Care of Lesion.*—On December 23, the diseased skin area was exposed to x-ray—5 ma., 90 K.W., 4mm., alum filter 16 inch, distance 30 min. Subsequently x-ray therapy was administered on two occasions: the first, on January 16th treated both buttocks and inguinal glands (over buttocks 8" gap, 16" dist. 4 mm. alum. filter 30 minutes, over glands 8 inch, gap 10 inch dist. 4 mm. alum. filter 12 min.), while the second, on February 3, was administered only to buttocks. (See formula above.)

On December 27, under gas anesthesia, the lesion was thoroughly denuded of its granulating surface by means of a uterine curette. Care was taken to remove all superficial tissue down to the fibrous connective tissue base. Even that portion extending into the rectum was curetted. The

area was then mopped with iodine and a dry dressing applied.

As for the care of the lesion following this surgical procedure, various medications were used. For several days the wound was cleaned with a preparation of three per cent iodine and alcohol, equal parts, but this was discontinued due to its irritating effect. Saturated boric solution dressings and zinc oxide ointment dressings on alternate days were then resorted to. The former was used as an antiseptic, while the latter was used both as an antiseptic and to keep the tissue soft. Starting on February 17, mercurochrome, one per cent, was used, and after a few days it was found to be most efficacious, both as an antiseptic and as a tissue stimulant, so for that reason was continued as the only local application until the wound was entirely healed.

From time to time it became necessary to remove exuberant granulation tissue. At first, when large patches were present, the curette was employed. Later, when only small areas of excessive granulation formed, silver nitrate (luna caustic) cauterization was the means of removing it.

Shortly before patient's discharge from the hospital there remained a very small area in the rectum which had not healed, so to this 600 milligram hours of radium was applied.

*Constitutional Treatment.*—On December 22 patient was placed on potassium iodide, five grains, three times daily, orally, with an increase of one to three grains daily until he was taking 225 grains per day. From February 1 to March 10, doses remained at seventy-five grains three times daily.

On January 3 intravenous injections of sodium iodide were commenced—thirty-one grains daily. After two weeks dosage was increased to sixty-two grains, where it remained until the administration of this drug was discontinued on January 29th.

*Results.*—The results obtained were most gratifying. Almost from the day the lesion was curetted and iodide medication instituted, improvement was noticeable. The

denuded area began to granulate, and epithelium grew from the periphery inward. At times excessive granulation would interfere with epithelialization, but this condition was met with as heretofore stated.

The patient's constitutional improvement was rapid. The moribund appearance vanished, his appetite and strength returned, and soon he was up and about the hospital as he pleased. The rectal condition improved in keeping with the progress of the surface lesion. On February 20 the patient was able to assume the natural sitting posture in a chair for the first time in over two years. On March 10 patient was discharged from hospital. The lesion was entirely healed and there was a firm epithelial surface established, except for a small area size of end digit of index finger, in the very center of the wound, which, although healed, had not yet shed its scab. (See Fig. 4.)

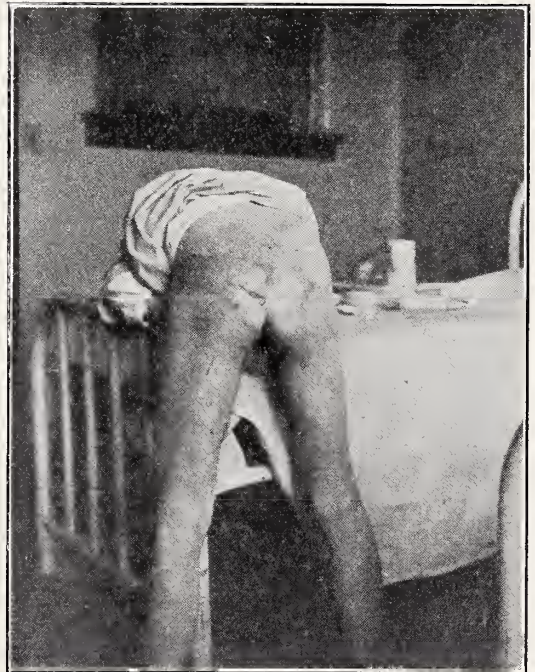


Fig. 4. Appearance of lesion at time of dismissal from hospital.

*Comment.*—The fact that this patient was previously treated for granuloma inguinale, and on second admission to hospital was diagnosed and treated successfully as a case of blastomycetic dermatitis, makes it an interesting case to report. In

this connection, we wish to stress the importance of carefully differentiating this disease from other skin lesions which it so closely resembles in many respects.

Again, it is worth while to emphasize the importance of securing specimens for study from the deeper layers of the lesion, since it has been found that material from the surface does not always harbor the blastomycetes.

That massive doses of the iodides should be administered is a quite effective idea, but we are of the opinion that there is no necessity of resorting to such preponderous doses, since a person's power of assimilation is limited. Therefore, when administered in amounts larger than the assimilable doses, much of the material goes

to waste, since it is rapidly eliminated in the urine, saliva, sweat, etc., without having had an opportunity to act. Furthermore, these massive doses, we believe, are harmful to the patient's general constitutional condition, since iodides affect metabolism, and are likely to even produce iodide cachexia. Iodism is another manifestation to be feared by excessive administration. The steady recovery of this patient, who was on moderate doses of iodides, upholds our contentions.

That the constitutional and local treatment should go hand in hand is worthy of note. Since most of these cases bear a mixed infection, only local care can properly prepare the field for the healing process that is to follow.

## THE IMPORTANCE OF RADIATION IN CANCER OF THE BREAST\*

C. M. HAMILTON, M.D., Nashville

CARCINOMA of the breast is a menace to all women, and each year this affliction ends thousands of lives prematurely. More than half the cases of carcinoma of the breast are fatal. Consequently, very few pathologic conditions require so much care and attention. Its incidence will probably never be entirely controlled, but its progress can be more successfully handled by early intervention. Surgery and radiation are the only acceptable agents for combatting malignancy and cancer of the breast thwarts the efficiency of both of them. The better of these two plans of treatment should not be questioned, but an intelligent combination sought. A comparison of these procedures is very unreliable. Statistics are valueless, since the degree of malignancy depends on so many factors and many of these are unknown. Cell morphology, structural involvement, rapidity of growth, the age and general condition of the patient, are factors in classification. Two tumors may appear clinically and microscopically identical, but differ widely in progress and dissemination.

Each case is a problem within itself, and requires considerable judgment for proper management. Localized adenocarcinomas can be readily excised and this is sufficient. However, there is generally a period in the growth of a mildly malignant tumor when it has a tendency to become more malignant type of tumor, in order to jeopardize reason every case of malignancy should be treated as though it were the most malignant type of tumor in order to jeopardize the patient's life as little as possible. The rapidly growing medullary tumors of the breast are the most difficult to deal with. Lee, of the Memorial Hospital, describes this condition as acute inflammatory carci-

nomatosis. He has also given the name of carcinomatous erysipelas to the nodular skin involvement which is frequently seen in recurrence. Both of these conditions are usually fatal.

Many surgeons are not so radical in their procedure as formerly. Dr. Emil Beck, who has had a wide experience in cancer surgery, recommends excision of the malignant mass and radiation of the glandular areas, unless there is definite gland involvement. When there is glandular involvement, surgery and radiation are both instituted. In this event, only a simple adenectomy is done. The bulk of the glandular structure is removed and complete dissection is not attempted. For the remaining involvement, radiation is considered quite as valuable as surgery and the patient is assured of a more comfortable existence. His results are apparently very favorable and some of the undesirable sequelae, such as painful swollen arms, following extensive axillary dissection, are eliminated. This method of surgical procedure, supplemented by radiation, seems the most rational plan of dealing with mammary carcinoma. Ewing claims that only one in every twenty-five cases with axillary involvement, or one in two hundred cases with supraclavicular involvement, is cured by surgery. It is very doubtful if routine gland dissection is justifiable, since so few cures can be obtained after involvement has occurred. Other therapeutic measures should be equally as effective and will not produce such undesirable sequelae.

It is the opinion of many observers that extremely high voltage radiation is not only unnecessary in many instances, but even harmful. Objectionable pulmonary changes have resulted in some cases. The present tendency is a return to the use of medium voltage and filtration. Patients receiving heavy courses of high voltage

\*Read before the Nashville Academy of Medicine, November, 1924.

therapy suffer from a dry, hacking, unproductive cough. By x-ray and post-mortem examinations, peribronchial infiltration and inflammatory changes have been demonstrated, and this condition usually results in fibrosis. The fibrotic lesions diminish for a few months, but never entirely disappear. There may appear a pleural exudate, causing adhesions and lung retraction. Radiograms of some cases resemble those of central pneumonia, but the temperature curve and blood picture preclude this interpretation. It is sometimes difficult to differentiate the pulmonary findings seen after radiation from those that are due to metastasis.

Early cases without intrathoracic metastasis are not suitable for extremely high voltage radiation. The cross fire effect that occurs from several areas of centrally directed radiation should be avoided. The object of radiation is to destroy malignant tissue within the chest wall and to prevent metastasis. The lung structure is very easily penetrated by x-rays, and a cross-fire of high voltage radiation is apt to cause harmful results. However, in advanced cases with questionable amount of involvement, it is advisable to use high voltage radiation. Lung changes that cause only a slight functional impairment are of minor importance compared to a patient's life. In the event of lung or mediastinal metastasis, high voltage therapy is certainly the method of choice. This procedure offers very little hope for permanent relief, but dissemination can be considerably retarded. Simpson, of Washington, reported a remarkable case at the meeting of the Southern Medical Association in 1923. There was extensive carcinomatous involvement of both lungs, following radical excision of each breast for malignancy. After failing to respond to medium voltage radiation, complete disappearance of all radiographic evidence of this condition has been maintained for two years by high voltage x-rays.

The general opinion is that preoperative radiation is more valuable than postoperative. However, more radiation is given after operation than before. This is partly

due to the anxiety of both the surgeon and the patient for early removal of the neoplasm. Many of the patients are not sufficiently educated to warrant delay in removal of the tumor. Some will get immediate reduction in the size of the growth and refuse operation. Nevertheless, these objectionable features do not detract from the value of preoperative radiation. It is well recognized that every group of malignant cells that remains in the operative field is potentially a new growth. It is also known that such tumor grafts are not likely to survive if they have been properly irradiated prior to operation. The theory has been advanced that a radiated tumor produces an antibody which renders the patient more resistant to that particular type of tumor. French and English observers have reported gratifying results from injections of radiated material in mice. It is claimed that absolute immunity to tumor transplants can be established. Russ and his associates, of London, have made use of this procedure in a few cases of carcinoma of the breast and are very enthusiastic over the outcome. The period of greatest immunity is probably at the eighth week, but there is very little difference between the immunity of one week and that of eight. Preoperative radiation enables the patient to receive this tumor enzyme by absorption. Should benefit be derived from the product of radiated neoplasms, the patient should have it. Another advantage of preoperative radiation is that the absorption of radiation energy is greatly augmented by a rich supply of blood and lymph. Both of these are considerably disturbed by surgical interference, which greatly decreases this assistance. The primary growth, composed of cellular, vascular and lymphatic tissue, is a more sensitive structure to radiation than that encountered after operation.

There is a diversity of opinion in regard to the interval between radiation and operation. It varies from immediate operation to several months. Sistrunk advocates a period of two to three months. He claims

that many inoperable cases become operable after such a period.

Postoperative radiation is probably less effective than preoperative, but is very important. The majority of cases of mammary cancer will terminate unfavorably regardless of the plan of treatment and it behooves one to put forth every possible effort to prevent recurrence, and in the event of recurrence, to increase longevity. Lee states that patients receiving postoperative radiation live three times as long as those who do not. McCarty and Sistrunk have recently investigated the microscopic findings in a series of patients who have died from breast cancer. They made the investigation in order to determine the natural resistance of the patients. Those cases living longest presented round cell infiltration, cell differentiation, cell vacuolization, and an increase in fibroblasts. Those who lived only a short time posses-

sed none of these resisting properties, and the intermediate group showed only a relative number of them. Besides the injurious action of radiation upon malignant tissue, it stimulates the production of all of these resisting forces.

It is not the purpose of this discourse to promote any particular branch of cancer therapy. The gravity of the malady is such that it demands a combination of every known means of eradication. A better understanding between the surgeon and the radiologist is desirable. At the present time, surgery and radiation seem to offer the best results in malignant conditions, and it will require time and close observation to establish the most ideal combination. The best interest of the patient will be conserved by ceasing to regard radiation and surgery as competing methods and by seeking that combination which will give the best results.

# THE JOURNAL

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MARCH, 1925

## ARE WE DISINTEGRATING?

There has been a feeling on the part of some that the medical profession of the State is lacking in that cohesiveness and professional loyalty which it once had. With the rapid multiplication of malpractice suits there has been afforded greater opportunities for physicians to display their loyalty to their profession and to their fellow physicians. That in the vast majority of instances, when occasion has arisen, the profession has held steadfastly to the ethical principles of loyalty and fidelity is quite true; but there have been notable examples recently where such has not been the case. Lawyers state that most cases of malpractice can never reach the jury unless there is introduced some adverse, or even questionable, testimony against a physician who is being sued for malpractice. And this testimony can only be given by another physician.

The writer knows of five malpractice suits in which judgment has been rendered against the defendant or a compromise entered into. Some few physicians must have played an important role in the outcome of these cases.

Nothing in the above should be inferred that the oath of "the truth, the whole truth, and nothing but the truth" should not be strictly adhered to, both in letter and spirit. But where an opinion of a correct procedure is held to be correct there is doubt as to whether this should be given in testimony against the opinion and procedure of an equally competent man, though the two opinions may differ widely.

There is nothing that can be said in extenuation of testimony given against a phy-

sician by another one on the fear of losing the following of a small group of his clientele.

There is an ever-increasing necessity of a closer loyalty and co-operation between the members of the profession, for one can never tell when he may be the object of a malpractice suit, and it would seem that the number of these suits is growing apace.

## WHY NOT ATTEND?

Few State Medical Associations can boast of a longer or more honored career than can the Tennessee State Medical Association. The meeting in Nashville in April will mark the ninety-second mile-stone in its history. Its membership has included, and includes now, men who have attained the very highest rank in the practice of medicine. Its rank and file is composed of physicians who are the peers of any State in the Union. Its scientific work has always been pitched on the very highest plane, and it may be said in all truth that the programs of the association have been the equal of any, and superior to most State associations.

With a realization of the truth of the above statements it is passing strange that the attendance at our meetings is not larger. With a membership of approximately sixteen hundred, the average attendance is about three hundred and fifty. One explanation of this may be found in the fact that many of our members do not fully appreciate the value to be received from attendance upon these meetings. It cannot be gainsaid that by attending the scientific assemblies, a vast store of interesting and useful information cannot be obtained. And the personal contact with our confreres is a stimulating inspiration.

Wherever the association meets, the local profession seems to vie with the other local profession in providing entertainment and recreational features.

While attendance upon an association meeting may not result in any immediate, tangible benefits, it is quite certain that

constant attendance will result beneficially in the long run.

Those who are called leaders of the profession of the State are regular attendants. Why do you not attend?

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### PROPOSED CHANGES IN THE CONSTITUTION AND BY-LAWS.

At the ninety-first annual meeting held in Knoxville, the House of Delegates appointed a committee on revision of the Constitution and By-Laws. This committee was composed of the Secretary of the association, chairman; Dr. S. R. Miller, of Knoxville; and Dr. A. F. Richards, of Sparta. This committee was empowered to make such changes as was suggested by the House of Delegates and to incorporate in the Constitution and By-Laws such amendments as had been previously passed, but were not to be found in the latest revision. There is but one new provision inserted in the Constitution, and that came by a motion of Dr. L. L. Sheddan, of Knoxville, which provides that the State Association shall meet in rotation in the three grand divisions of the State, instead of meeting in Nashville in alternate years. The House of Delegates unanimously endorsed this change, provided notice of said change would be printed in the Journal. Hence the above statement.

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## DEATHS

Dr. B. L. McDonald died March 15, at his home in New River, age 47. Dr. McDonald was a graduate of Lincoln Memorial University, Medical Department, Knoxville, in the class of 1916.

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Dr. Riley H. Davidson, of Lexington, died March 21, age 74. Dr. Davidson for many years was county health officer and for the past four years has been an honorary member of the Henderson County Medical Society.

Dr. Charles N. Newman, of Tullahoma, died March 10, age 69. Dr. Newman was a graduate of the University of Tennessee, College of Medicine, Memphis, in the class of 1889.

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### NEWS NOTES AND COMMENT

Dr. John M. Stewart, of Martin, has removed to Van Buren, Ark.

Dr. G. M. Allison, of Selmer, is taking post-graduate work in Louisville.

Dr. J. W. Brandau, of Clarksville, sustained a fracture of the right hip March 14.

Dr. W. D. Abernathy, of Pulaski, suffered a stroke of apoplexy February 26, while on a train.

Dr. H. W. Hundling, of Memphis, was married on March 10 to Miss Rebecca Burnett, of Birmingham, Ala.

Dr. Buist Litterer, of Nashville, announces the opening of pathological and bacteriological laboratories at 512 Lambuth Building.

Dr. W. J. Breeding, of Sparta, has been appointed acting director of the Division of Venereal Disease Control of the State Board of Health.

Dr. O. S. Hauk, of Kingsport, announces that he has an opening for a laboratory and X-ray technician at a salary of \$125 per month.

Sixty physicians and surgeons touring the medical centers of the South in a special car were entertained by the medical profession of Memphis, March 12.

Dr. J. R. Tarpley, of Nashville, was found unconscious in his office March 7, having suffered a stroke of apoplexy. Reports from his bedside indicate that he is improving.

Dr. P. H. Smith, of Glennville, Ga., writes that he would like to get in touch with any town in Tennessee with a population of two thousand or over that is in need of a young, up-to-date physician.

Dr. J. H. Barnett, of Chattanooga, has acquired the Rhea Springs Hotel property, which is located in Rhea County a short distance from Spring City. It is Dr. Barnett's idea to make this property an up-to-date summer resort.

Dr. J. W. Johnson, of Chattanooga, entertained at dinner the members of the Quarter Century Club, March 3. The following members of the Chattanooga profession who had practiced for more than twenty-five years were in attendance: Dr. E. B. Wise, Dr. A. W. Boyd, Dr. Fred C. McIsaac, Dr. Fred Stapp, Dr. J. W. Johnson, Dr. T. E. Abernathy, Dr. H. P. Larrimore, Dr. W. M. Bogart, Dr. E. C. Anderson, Dr. Y. L. Abernathy, Dr. E. Denton, Dr. W. G. Bogart, Dr. Frank Trester Smith, Dr. J. B. McGhee, Dr. J. W. Macquillan, Dr. B. S. Wert, Dr. Geo. West, Dr. Cooper Holtzclaw.

The secretary of a county medical society in West Tennessee writes as follows: "I have seen a lot said in the State Journal, and in other journals, about the shortage of physicians in rural communities. Do you know of any specific instances where a community in Tennessee needs a physician? We are crowded in this locality, and if I could find a rural location able to support a physician, I would gladly look it over. Would you be kind enough to advise me if you know of one or more openings in the State?"

If any one can give the above desired information, please communicate with the State secretary's office.

### MEDICAL SOCIETIES

The Putnam County Medical Society has elected officers for 1925 as follows: Dr. J. T. Moore, Algood, president; Dr.

Z. L. Shipley, Cookeville, first vice-president; Dr. J. Mac Wheeler, Baxter, second vice-president; Dr. Lex Dyer, Cookeville, secretary-treasurer.

The following were elected officers of the Williamson County Medical Society at their meeting in February: Dr. L. M. Graves, Franklin, president; Dr. J. T. Sugg, Brentwood, vice-president; Dr. K. S. Howlett, Franklin, secretary-treasurer.

The Macon County Medical Society met at LaFayette, March 12, and elected the following officers: Dr. A. Y. Kirby, LaFayette, president; Dr. D. D. Houser, LaFayette, vice-president; Dr. F. B. Clark, Red Boiling Springs, secretary-treasurer.

Officers of the Sumner County Medical Society for the present year have been elected as follows: Dr. J. M. Oliver, Portland, president; Dr. C. D. Robbins, Gallatin, vice-president; Dr. L. M. Woodson, Gallatin, secretary-treasurer.

After lying dormant since 1922, the Franklin County Medical Society is again functioning, the secretary, Dr. John P. Grisard, of Winchester, having reported to this office nine active members.

Regular meetings are held by the Washington County Medical Society the second Thursday in each month at the John Sevier Hotel at 11:30 a.m. At their last meeting Dr. J. L. Hankins was elected president; Dr. H. D. Miller, vice-president, and Dr. Lee K. Gibson, secretary-treasurer. All reside in Johnson City.

### ANNOUNCEMENT

Dr. Sam P. Bailey, of Nashville, secretary of the Middle Tennessee Medical Association, announces that the sixty-first semi-annual meeting of that association will be held in Shelbyville, May 14-15, 1925. The officers of the association are Dr. J. C. Kelton, of Lascassas, president; Dr. J. M. Lee, of Nashville, vice-presi-

dent. The secretary states that there is great demand for a place on the program and urges that all who may desire to present a paper at the meeting communicate with him at once.

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### OFFICIAL CALL.

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION.

The seventy-sixth annual session of the American Medical Association will be held in Atlantic City, N. J., from Monday, May 25, to Friday, May 29, 1925.

The House of Delegates will convene on Monday, May 25.

The Scientific Assembly of the Association will open with the General Meeting held on Tuesday, May 26, at 8:30 p.m.

The various sections of the Scientific Assembly will meet Wednesday, May 27, at 9 a.m., and at 2 p.m. and subsequently according to their respective programs.

WILLIAM ALLEN PUSEY,  
President.

FREDERICK C. WARNSHUIS,  
Speaker, House of Delegates.

Attest:

OLIN WEST, *Secretary*.  
Chicago, Ill., March 10.

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### HOUSE OF DELEGATES.

The House of Delegates will convene at 10:00 a.m. on Monday, May 25, 1925, in the Rose Room, Hotel Traymore, Boardwalk.

### REPRESENTATION.

The apportionment of delegates made at the Chicago Session of 1924 entitles your State Association to two delegates for 1925.

"A member of the House of Delegates must have been a member of the American Medical Association and a Fellow of the Scientific Assembly for at least two years next preceding the session of the House of Delegates at which he is to serve."

"Delegates and alternates from constituent associations shall be elected for two years. Constituent associations entitled to more than one representative shall elect them so that one-half, as near as may be,

shall be elected each year. Delegates and alternates elected by the sections, or delegates appointed from the United States Army, United States Navy and United States Public Health Service, shall hold office for two years."—Chapter 1, Sections 1 and 2, By-Laws.

RULES FOR THE GUIDANCE OF THE COMMITTEE ON CREDENTIALS ADOPTED BY THE HOUSE OF DELEGATES AT ATLANTIC CITY, N. J., JUNE 6, 1912.

1. Credentials shall be of two parts. The first part shall be sent to the office of the Secretary of the American Medical Association by the secretary of the constituent association, not later than seven days prior to the first day of the first meeting of the House of Delegates, and shall be a list of delegates and alternates for that association. The constituent associations shall designate an alternate for each delegate, who may take the pledge of the delegate when authorized to do so by said delegate in writing. In the absence of such authority, any alternate who has been duly chosen by the constituent association may be seated in place of any delegate who is unable to attend, provided he presents proper official authority from said association. A certificate signed by the president or secretary of the constituent association shall be deemed legal authority (as amended June 7, 1921).

2. Each delegate shall be furnished with a credential by the secretary of the association by which he is elected on a prescribed form furnished by the Secretary of the American Medical Association, which shall give the date and term for which he was elected and who was elected to act as alternate for him in case of his inability.

3. A delegate, on presenting himself to the Committee on Credentials, may be seated even though he may not present part 2 of his credentials, provided he is properly identified as the delegate who was elected by his association and whose name appears on the Secretary's record.

4. No alternate may be seated unless his credentials meet the same requirements as designated for the delegate, and he can

show written evidence that he is empowered by his delegate to act for him, except as provided for in Section 1 as amended (as amended June 7, 1921).

#### SCIENTIFIC ASSEMBLY.

The General Meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held Tuesday evening, May 26, 1925, at 8:30. The Sections will meet on Wednesday, Thursday and Friday, May 27, 28 and 29, 1925.

Convening at 2:00 p.m., the Sections on Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Pathology and Physiology; Stomatology; Urology; Orthopedic Surgery; Preventive and Industrial Medicine and Public Health.

Convening at 2:00 p.m., the Sections on Surgery, General and Abdominal; Ophthalmology; Diseases of Children; Pharmacology and Therapeutics; Nervous and Mental Diseases; Dermatology and Syphilology; Gastro-Enterology and Proctology; Miscellaneous Topics.

#### REGISTRATION DEPARTMENT

The Registration Department will be open from 8:30 a.m. until 5:30 p.m. on Monday, Tuesday, Wednesday and Thursday, May 25, 26, 27 and 28, and from 8:30 a.m. to 12:00 noon on Friday, May 29, 1925.

### MISCELLANEOUS

#### ON REVISING THE MEDICAL CURRICULUM

An "outsider" objectively examining the seemingly endless number of criticisms of current medical education may well gain the impression that the entire system, along with its substructure of preliminary or premedical training and the superstructure of internship, has been built on wrong lines. The adverse comments touch almost every detail of its architecture. We are told that, by reason of the prolonged course of study entailed, the present-day scheme tends to eliminate the poor boy from the pursuit of a medi-

cal career. One consequence of this is perhaps the reduction of the number of physicians in the rural districts. A recent report admits (1) that it was in former days chiefly students of small resources who, in immediate need of funds on graduation, were willing to accept the hardships and isolation of rural practice for the certainty of immediate returns. Yet whether in point of fact the "poor boy" forms any smaller proportion of the medical student body of today than he formerly did is a question on which no reliable data have been, or indeed well could be, assembled. So far as the belief has foundation in actual observation of the medical student body over the last twenty or twenty-five years, moreover, Mayers and Harrison remind us that the general economic level has risen substantially in this period, carrying with it all classes, and, correspondingly, all classes of medical students. Not a few educators rebel at the thought of cheapening medical education by lowering the scientific standards in order that more poor persons may become physicians. Years ago, Billroth (2) insisted that all civilization begins with property. The development on property, which is in turn increased by development. This is an ancient natural process. How, he asks, can it be otherwise in the physician's art? That is why the great Viennese surgeon considered it his duty to dissuade any one from the study of medicine who has not at his disposal a certain minimal amount of money, education, industry and talent.

A few years ago, blame was placed on inadequate premedical training in explanation of the shortcomings of the modern physician. An increase in the number of prescribed courses in science demanded by the better class medical schools naturally followed. Now we are told that it is becoming more and more questionable whether the added requirements are producing the desired results. The last critic (3) asserts that, since medicine is an art as well as a science, the cultural subjects and the humanities should

be given greater consideration than they now receive. The implication is, Koch (3) adds, that the scientific instruction is the important phase of the premedical training and that nothing else matters. While this may be true, so far as immediate needs go, it is equally true that such reasoning ignores the needs of the future. Both types of subject are certainly essential, and neither can replace the other. Whereas too much emphasis on the scientific side tends to make the student an unsympathetic and "cold-blooded proposition," the broadening influences of these other subjects, Koch continues, make for a humanized being.

It is perhaps easy to place too much emphasis on the method of training and on the detailed content of a preparation for the practice of medicine. The subject has become cyclopedic in character; and the mastery of every chapter, item after item, can be resolved into a mere memory stunt. A comparison of the "learning" that a dozen highly successful physicians were forced to acquire through the medium of curriculum prescription would probably show surprising diversity. It is undoubtedly true that students can be well grounded through the medium of many courses. Cushing (4) remarked before the annual congress on medical education at Chicago last year that experience has shown that it perhaps does not make any very great difference, provided Nathan Smith is on one end of the log, with the right kind of students, and not too many of them, on the other; and that we are pressing for formulas to solve something for which there is no formula. The personal equation of the teacher does not appear in the syllabus issued from the dean's office, though it is known in every students' boarding house.

Would it not be well, then, to persist in directing the student's attention more emphatically to the objects to be sought rather than to details of subject-matter, and to urge him to focus it sharply on the problems that confront the practitioner. That is, after all, the way of everyday

life. There are jobs—tasks that are easy, and some that are difficult—to be done. Only as one realizes what is to be done can one plan and perform effectively. As Koch recently asserted, the practice of medicine implies (1) an ability to diagnose the patient's ailment, and (2) an ability to take care of the patient; i. e., to treat him by any one or more of all the known and recognized preventive and remedial measures that the diagnosis might indicate and suggest. The ultimate aim of medicine is, further, to prolong life and to preserve as well as restore health. The candidate for licensure should be made deeply conscious of his forthcoming duty. If we could be certain that he will develop a conscientious appreciation of it, there would be less need of worrying so much about the details of the medical curriculum. To do one's duty well, one must first see where it lies.—*Jour. A. M. A.*, Jan. 31, 1925.

1. Mayers, L., and Harrison, L. V.: *The Distribution of Physicians in the United States*. New York, General Education Board, 1924.

2. Billroth, T.: *The Medical Sciences in the German Universities*. New York, The Macmillan Company, 1924.

3. Koch, E. W.: *Preprofessional Training as Revealed by the Needs of the Physician*, *Science* 60:580 (Dec. 26), 1924.

4. Cushing, Harvey: *The Clinical Teacher and the Medical Curriculum*. *J. A. M. A.* 82:841 (March 15), 1924.

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#### THE AMERICAN BOARD OF OTOLARYNGOLOGY.

The American Board of Otolaryngology will hold its first examination during the meeting of the American Medical Association in Atlantic City, May 25 to 28.

According to the rules of the board, applicants are divided into three classes:

Class 1. Those who have practiced otolaryngology ten years or more.

Class 2. Those who have practiced otolaryngology five years and less than ten years.

Class 3. Those who have practiced otolaryngology less than five years.

The type of examination is different for each class.

The secretary, Dr. H. W. Loeb, announces that thus far over three hundred applications have been made.

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In order to insure better work in bronchoscopy, esophagoscopy and suspension laryngoscopy, and a lower rate of mortality in these cases we, the undersigned members of the Nashville Academy of Ophthalmology and Otolaryngology, enter into the following agreement:

1. Each of us will turn over to this Academy our entire equipment for doing the above work.

2. The undersigned members will select one of their number to do bronchoscopy, esophagoscopy, suspension laryngoscopy and allied work. The method of selection shall be by secret written ballot, without nomination and the hindmost man in each ballot shall be dropped and the balloting be continued until one man shall receive the majority. Such member shall be declared elected. Any member of this society who does not care to join this agreement may decline without prejudice against him, except that he shall not be voted for, nor take part in the selection of one to do this work.

3. We agree to refer all such cases to the member selected by us and to assist him whenever called upon to do so and to co-operate with him in every way in carrying out this work.

4. To the member selected to do this work shall be turned over in trust the entire equipment for bronchoscopy, esophagoscopy and suspension laryngoscopy now in the possession of each one signing this agreement. This equipment shall be kept in trust and used by the member selected to do this work. The equipment shall not become his private personal property, but in case of duplication or excessive number of the same parts, such surplus parts may be exchanged

for other equipment needed in this work, or any of the unnecessary equipment may be sold and the proceeds reinvested in equipment for this work.

5. The member so selected shall select an assistant who shall help him in this work and who in his absence shall take charge of this work.

6. The member selected shall keep a detailed record of every patient receiving the above character of treatment and shall make an annual written report to this society of the work done in the preceding calendar year. This report shall be presented to this society not later than the April meeting of each calendar year and shall give a satisfactory account of each case treated during the previous calendar year. The report shall include the name, initials or number of each patient, their age, sex and nature of the injury, accident or disease, how it occurred or developed, the pre-operative diagnosis, description in brief of the operation or treatment, the immediate and end results, together with complications and percentage of fatalities. This report shall be compared with reports of previous calendar years, beginning with 1925 indicating whether the quality of the work is improving, together with any and all other information which he may think germane to the subject or which the society may call for.

7. The member so selected may at any time resign this work; or if, in the opinion of the majority of this society, his work is not satisfactory, they may call for his resignation and select his successor, to which successor he shall turn over the entire equipment received from this society.

The above resolutions were adopted and Dr. Hilliard Wood was elected to do the work as outlined by agreement. Dr. Eugene Orr was to be his associate in this work.

## BOOKS RECEIVED

**ABT'S PEDIATRICS.** By 150 specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totaling 8,000 pages, with 1,500 illustrations, and separate index volume free. Now ready—Vol. IV containing 1,271 pages with 271 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, \$10.00 per volume. Sold by subscription.

Volume IV of Abt's system of pediatrics deals in monographic form with diseases of the pleura, heart, ductless glands, and genito-urinary organs.

Each monogram is by a well-known specialist. Surgery of the thorax, physiology of the circulation, electrocardiography, physiology and pathology of the blood, endocrinology, and the urine in infancy and childhood are ably discussed. While there are some repetitions, as two articles dealing with blood transfusion, the book as a whole is singularly free from this fault. The amount of space devoted to blood-counting, urinalysis and electro-cardiography may be criticized by some as being unnecessary or too advanced for general reading, but it must be remembered that such information is necessary to make this system complete.

A study of this volume and those previously issued is well worth while to those interested in childhood diseases.

R. H. P.

**FERTILITY AND STERILITY IN HUMAN MARRIAGES.** By Edward Reynolds, M.D., Boston, Mass., and Donald Macomber, M.D., Boston, Mass.

This is a remarkably well written book and to the reviewer's knowledge is the first of its kind. It contains 277 pages with a special article by Edwin L. Young, Jr., M.D., of Boston, on "the determining causes of male sterility."

The arrangement of the book is excellent. First the biology and physiology of sterility are taken up and this is followed by a chapter on the determining causes. There are a few minor points in biology and physiology that the average gynecologist will take issue with the authors. The subjects, however, as a whole are well presented and give information that is not found in any other book. The latter part of the book is devoted to the marital habit, the examination of a case and the surgery of sterility. This part of the book is in conformity with the high standard of the early chapters.

The authors do not lay sufficient stress on the importance of the Rubin's test before advising any surgery for the relief of sterility. This is rather surprising, as one of the authors, Macomber, has brought out an apparatus that is a modification of Rubin's.

The book, as a whole, fills a long felt need and it is one that not only will be of use to the specialist but also to the general practitioner and family doctor.

L. E. B.

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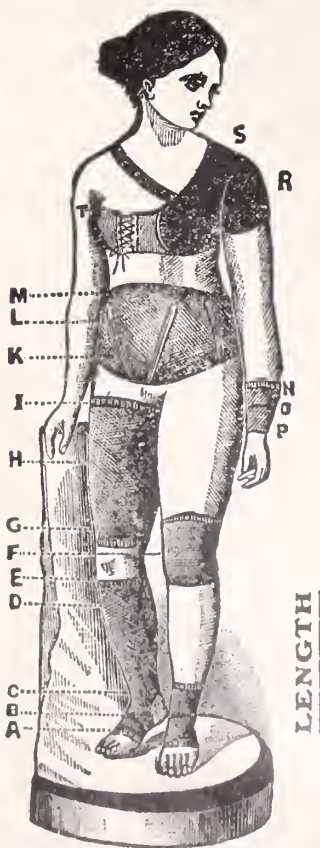
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# THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, under Direction of the Trustees

J. F. GALLAGHER, M.D., Editor and Secretary

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## THE PRESENT UNSETTLED AND CHAOTIC CONDITION OF THE MEDICAL PROFESSION WITH A BRIEF DISCUSSION OF SOME OF MORE IMPORTANT FACTORS RESPONSIBLE FOR SAME\*

FRANK D. SMYTHE, M.D., F.A.C.S., Memphis

FELLOW Doctors and Gentlemen: Before delivering the message which I have in store for you, I wish to express my appreciation for the great honor you conferred upon me when you chose me as President of the Tennessee State Medical Association, and as your leader for the ensuing year. I am unable to select words capable of conveying the degree and the depth of my gratitude, and of my love for all who participated in doing honor unto me and to my family, when you selected me from the rank and file of the profession to represent you and to direct the activities of the Association for the year.

An honest effort has been made to discharge the duties of the President, though I have fallen short of my hopes, aspirations and my expectations of accomplishing much worth while.

### CO-WORKERS

I have counselled, advised and assisted to the best of my ability my field marshals in the supreme efforts they have made to remedy existing evils, and to checkmate conditions with which we are threatened by the big interests; though the majority

of the members of our profession are in a somnambulant state, and are indifferent concerning the direction in which we are being driven and what us in store for us at our journey's end.

We have failed in our efforts temporarily to accomplish the reforms for which we have labored. Should we fail ultimately and finally in interrupting their onward march, laws will be made supplementing the existing laws that will result in our ultimate undoing, and the medical profession will find ere long that we are under the thumb of the powers that be, and the public will be at the mercy of the medical parasites, cults and fakirs, and our independence and our usefulness will be a thing of the past.

### ENEMIES

It is essential that our profession be a united one if we are to attain the objects which we must attain, and for which we have so valiantly labored. It is with humiliation, regret and some surprise to myself that our most potent enemies are found within our own ranks. But for their assistance the insurance companies and the employers of labor would be unable to hold in bondage the industrial element of our State and to fix the price of our wares, even without the consideration of a conference.

\*Presidential address delivered before the ninety-second annual session, Tennessee State Medical Association, Nashville, April 21, 22, 23, 1925.

## STATE MEDICINE

State medicine at present is confined largely to the industrial element of our population. *Be not deceived.* The forces behind this movement are to embrace the whole of society and are not asleep and will not stop of their own accord until they shall have accomplished their purposes, or until the hydra-headed monster shall have been driven from the field by the marshaled forces of organized medicine.

The names of the best element of the profession are not found upon the pay rolls of the government, working upon a salary. Neither will the names of the best men of the profession be found upon the pay rolls of the state in the event of state medicine. The salaried man is prone to pursue that policy that in his opinion will most likely result in the increase of his rank, carrying with it an increase of his pay.

The status of the public under such a regime would be more deplorable, more unfortunate, and more helpless than were the citizens of Nome during the recent epidemic of diphtheria pending the arrival of Gunna Kasson with his team of noble dogs, lead by Balto, the mightiest of them all, drawing his sleigh filled with the specific for that disease. All honor to Gunna and his dogs. A monument should be erected to the man and his dogs for the splendid service which he rendered humanity on that occasion. Such sacrifices made by medical men from the day of Hippocrates to the present time are entitled to credit, and are responsible for the exalted position which the medical profession has always occupied, and which it still occupies to some extent, though to a rapidly lessening degree.

## MEDICAL STUDENTS

The system in vogue at present of making doctors out of medical students is too costly in time and money. The cost of present medical education is far beyond the reach of that class of the public from whence the majority of the medical students of former days was drawn. The medical profession is rapidly becoming a profession for the sons of the rich man, and that is a most unfortunate situation.

## QUALIFICATIONS

I am in accord with Dr. Pusey on the subject of medical education; and agree with the doctor when he says that a high school graduate is qualified to become a medical student and begin the study of medicine, and to prosecute the study with pleasure and profit. Many of the foremost physicians and surgeons of this country—men with national, yea international, reputations—never had a preliminary education equal to the education possessed by the graduate of a recognized high school of today; and had the requirements been such in those days as they are today, those men could not have even matriculated in a medical college and the world would have been deprived of their labors and of their wonderful contributions to medical and surgical literature.

## RESEARCH WORKERS

If medical colleges are conducted for the purpose of making research workers of their students, and not practitioners of medicine, the additional two years in a university would not be a total loss, as is the case today. Two years devoted to the study of some of the sciences is advantageous to the student preparing to do research work, though not essential.

## UNDERGRADUATE COLLEGES

The curriculum should be modified, and the schedule changed in the college where undergraduates are taught. The concerted efforts of the medical faculty should be devoted to teaching the students the principles and practice of medicine, so as to prepare him to engage in the practice of medicine after his graduation.

## TIME

Much valuable time is lost by not permitting the student to begin the study of clinical medicine on his matriculation. The French and the English method results in the creation of more successful practitioners than does the university, or German method. The latter method succeeds in turning out a larger per cent of teachers and research workers. A research worker may be an M.D., but the research worker is never found engaged in the practice of

medicine upon human beings. A practicing physician may be capable of developing into a research worker, though research work is not done by men engaged in general practice.

#### TEACHING MEDICINE

The function of a medical college is to prepare medical students for the practice of medicine and surgery. The undergraduate school cannot, and should not, attempt to prepare the student further than to embark in the practice of his profession. Surgery and the other specialties should be taken up after his graduation from an undergraduate medical school.

The present system adopted by most of the American medical colleges was evolved from the recommendations of Abram Flexner. The attempts to carry out the plans suggested by him necessitated the taking of the teaching of medicine out of the hands of the medical profession, and that was the most unfortunate step that has ever been taken concerning the teaching of medicine.

Teachers, research workers and practitioners of medicine are all needed, and the public would suffer if deprived of the services of either. However, the point I want to emphasize is that so much time is not needed to prepare the student to begin the practice of medicine with safety as is required to develop a student into a research worker. Colleges are not supposed to stuff a student so full of knowledge that there is no place for storing additional information after his graduation. Medical students should be prepared by the undergraduate medical school to begin the practice of medicine immediately after their graduation. Should a student aspire to do research work, or to engage in the practice of a specialty after graduating and engaging in general practice for a few years, he could then fit himself for the preferred work in a post-graduate school, or better still, by serving an apprenticeship for some years with a master practitioner working in his chosen field.

#### SCARCITY OF PHYSICIANS

There is an unequal distribution of physicians. There is no scarcity of physicians.

The scarcity of physicians has been discussed to such an extent that no doubt exists as to a scarcity in many localities. A remedy for the relief of the condition, practical in nature, has not been suggested. The young graduates unload themselves in the cities, where a marked congestion of physicians already exists, but no relief is afforded the rural districts.

There will be no change so far as the country is concerned, for the reason that the graduates in medicine of today are not returning to the country from whence they came. They are in search of a position, and are not seeking a location, preferring to reside in a city and work for a salary rather than to be independent practitioners in the country, where their services are needed.

#### ATTITUDE

The attitude assumed by the teacher of internal medicine is to some extent responsible for the medical students of today selecting a specialty during their student days. None of the teachers will admit they are general practitioners of medicine. They resent the title, and on every occasion advertise the fact that they are diagnosticians and consultants, and are not engaged in doing a general practice. Their attitude is such that the medical student is impressed with the idea that the general practitioner is looked down upon by his fellow doctors, and that no man is engaged in general practice who is qualified to practice a specialty.

It is natural that medical students so environed begin to think over the various specialties and try to decide which one they will select as their specialty, and without proper preparation after graduation he advertises and begins to practice his specialty; hence the specialties have become greatly cheapened. A specialist should know a great deal about all subjects pertaining to medicine, and should know everything pertaining to his specialty. There should be no attempt to create a specialist out of a student of medicine during his college days. It does not make good nonsense for a young man to assume on the day of his graduation that he is qualified to engage in the practice of any specialty.

He should be prepared to embark in general practice with safety, and with a fair degree of success without additional training. Not so with any specialty.

#### ALL-TIME TEACHERS

Teachers of medicine should be doctors of medicine, and should be engaged in the active practice of medicine. The method of selecting a well-trained protege, or a son, of one of the liberal donors of an institution to be placed at the head of surgery, or of either of the other departments of medicine, may succeed in teaching the students of the institution the theory of the chemistry of the pneumococcus, but it will never succeed in making practitioners of medicine and surgery out of them.

All-time teachers of clinical medicine have proven unsatisfactory in the main, and they will continue to do so. They are generally a myth. All of one's time is never consumed in teaching. The all-time teacher is not a fixture. His ear is in contact with the ground, he is looking for an increase in salary, and is likely to leave his position almost between suns for a more lucrative one across the street. He does not have the love and affection for the institution as such that a teacher does who constitutes an important member of society in the community in which he resides, and where he is engaged in the practice of his profession.

None but a physician engaged in active practice can get the viewpoint of the doctor, or acquire that priceless information which the practitioner only possesses, much of which is not to be found in any textbook. Such valuable information is lost to the medical student who is so unfortunate as to be taught medicine by a professional teacher, who is not also a practitioner.

#### MATERIA MEDICA AND THERAPEUTICS

Materia medica is a very important branch of medicine and is being overlooked in regular medical colleges, but the ignorance of that subject by the graduate of today is almost criminal.

Therapeutics is likewise a neglected subject to a dangerous degree, and the art of prescription writing is a lost art. A teacher of therapeutics should be a physician en-

gaged in the practice of medicine, of ripe experience, and having a full knowledge of the physiological action of drugs. And he should be a firm believer in the efficacy of drugs if given when and where indicated. There should be no place on the teaching staff of any medical college for the therapeutic nihilist.

The curriculum of the schools of Osteopathy include every branch pertaining to the practice of medicine and surgery with the sole exception of materia medica and therapeutics. They do not practice what they preach, as the more intelligent ones are found slipping in "for the patient's sake," medicine of some kind.

#### THE THERAPEUTIC NIHILIST

The therapeutic nihilist is a physician who proclaims from the house top that he has no confidence in medicine. It is needless to say that such an individual does not need a jury to convict him of assinine ignorance. Such physicians rely upon the detail man for advice as to what should be done for his cases; and the detail man has on his tongue's end a list of remedies and agents manufactured in a certain way by his firm, and to get the best results in prescribing said remedies should be used, and he modestly suggests that the name of his firm be mentioned in prescribing for the patient.

#### BOOKS USED BY MEDICAL STUDENT

Ponderous volumes are placed at the student's disposal. The subject matter is often poorly arranged. Volume after volume has been written on the subject of typhoid fever, tuberculosis and syphilis. The heads of the departments, in lieu of assisting the student, and of giving him the benefit of their knowledge and wide experience, often direct the student to read the literature on the subject; and in the course of time the teacher reviews the literature with the student to determine whether or not he has a good memory, or a bad one. The experience of the teacher has been of but little, if any, benefit to the student.

The points of special interest and of importance to the student, to the physician, and to the patient, could have been presented in a brochure, or a small volume,

and there would not have been such a loss of time in reviewing pages and pages that contributed nothing of additional value on the subject.

#### LABORATORY

The study of pathology and bacteriology is one of transcendent importance. Medicine and surgery cannot be safely practiced without proper knowledge of these subjects. But too much of the undergraduate student's time is spent in the laboratory for one who expects to engage in the practice of medicine. The general practitioner does but little laboratory work when he enters the field of active practice. His laboratory work is limited to doing very few things, and the technique for doing those few things can be acquired by one of average intelligence working with a competent teacher engaged in that line of work, in a period of from three to six months. Why spend so much time in attempting to learn something in which he is not specially interested, and something that he will rarely if ever use in the pursuit of his life work and neglect those things with which he will come in daily contact in the discharge of his professional duty.

#### THE FUNCTION OF A MEDICAL SCHOOL

The function of a medical school is to prepare its students for engaging in the practice of medicine. Research workers, and those desiring to engage in the practice of one of the various specialties can continue his training elsewhere—an undergraduate school is not the place for him to conclude his preparation for the work he is to perform if it be other than that of a general practitioner.

#### DIFFERENCE IN PHYSICIANS

There is a great difference in the aspirations, qualifications and ability of different physicians. It would be pleasing for us to know that a citizen residing from twenty to fifty miles from a railroad could secure the services of a physician thoroughly trained and pre-eminent in his profession, to treat him in case he needed the services of a physician. Such, however, is not the case, and it never will be. Superlatively trained physicians are not seeking such a place as a location. The discussion of the

question as to why he will not locate in the rural district is interesting from an academic standpoint, but the country remains short of physicians and the cities continue overcrowded.

#### A CHANCE FOR THE COUNTRY TO SECURE MEDICAL ATTENTION

The present-day doctor being out of reach of the country localities, the material out of which country doctors are made must come from elsewhere than the towns and cities. In other words, the honest, high-minded country boy who aspires to become a physician, should be encouraged to do so. He can be equipped for doing a safe and sound general practice, but medical schools must exist to give such a man the necessary training. Today there are no such schools.

#### THE HIGH SCHOOL DIPLOMA

A graduate from a recognized high school is qualified to begin the study of medicine. It is common knowledge that the present method of making doctors places them beyond the reach of the citizens of the rural districts. The graduation of a greater number of physicians under the present system will not solve the problem; because the student graduating now cannot be induced to go to the country to locate; and, so far as the country districts are concerned, our medical schools had just as well close their doors; and in the absence of a change the country must look elsewhere for medical services.

The Flexner Foundation, or the trust method, has utterly failed to supply the medical needs of the country. Medical men, educated as they are being educated today, cannot be induced to locate in the country to practice medicine. They will not deprive themselves or their families of the attractions, and of the supposed advantages of the city, to locate in the country because there is need of a physician in a given locality. It is of no practical importance to manufacture a product regardless of its superior properties, if the price is such as to place it beyond the reach of the consumer.

We have more than one quality and make of automobile. For a citizen who can

afford to own a Packard, he should have one. If, on the other hand, he is unable to own a high priced car, it does not follow that he must necessarily walk. The Ford is in his reach, and it will take him anywhere that he could go in his Packard. As to quality and the ability to produce results there is not as much difference between the two types of doctors as there is in the two makes of cars. In other words, a country or a given section of country, deserves the quality of medical services for which it is willing and able to pay.

#### A DETERMINED EFFORT WAS MADE

A determined effort was made by me and by my committees to have the most vicious features of the Workmen's Compensation Act amended. We were given a hearing by the committee of the Legislature, but the steam roller continued on its mission and brushed us out of the way. The compensation we have received thus far for our activities in behalf of the public and the profession is the sobriquet, "A set of political doctors."

#### INSURANCE CLERKS

The insurance clerks and the employers of labor have succeeded in keeping the industrial element of our State in bondage.

#### THE PASS

The trip pass. The annual pass. Of all the mediums of exchange the pass is in a class to itself. Railroad surgery has become an institution in this country. Many of the chief surgeons of some of our great railroads have been prominent in their profession, with an attractive personality and it has not been difficult for them to create a machine capable of impressing the Legislature of our state with the justness of the cause, or causes, espoused by the corporation of which they are a part. The purchasing power of the pass is almost unlimited; and the holder of a pass will respond to a call from his chief and remain on the firing line until every vestige of opposition to their employers' interest shall have been removed.

Organized medicine, in open meeting, after much debate, reached the conclusion that certain laws should be amended and other laws be enacted in the interest of the profession and in the interest of the state.

In spite of this a number of physicians, pass-holders, will be found lined up with the interests in their efforts to perpetuate the system of bondage that now obtains, unmindful of the action taken by their local and state societies.

The fees paid the local surgeons in dollars and cents is disgracefully small, but when the check is received for services rendered a corporation, with a pass attached, the remuneration becomes satisfactory, and protests against sweat shop methods will rarely if ever be heard. The pass is all powerful and compensates for all shortcomings. Pass holders, or many of them, are representative men in the profession, yet those same men will be found buttonholing politicians and urging them to cast their votes against the amendments recommended by the local and state medical societies; going so far with the corporation interests as to favor a law that denies the sick and injured man the privilege of selecting the physician of his choice to treat him in case of illness or accident. This question will not be settled until it is settled right, and I do not believe that organized medicine as such will ever be found lined up working in opposition to the principles which have made this the greatest country of all. We should be proud and jealous of the privileges and rights guaranteed us by the Constitution, and we should stand ever ready to contribute our part toward defending and maintaining those rights.

The medical profession is in need of a medical Moses or a medical Gompers. A leader with power, with ability, with integrity, and possessed of a personality to guide us and to restore us to the exalted position which our medical forefathers occupied, which we should occupy, and which we will occupy, provided we exercise ordinary intelligence concerning the business side as well as the professional side of the questions pertaining to our profession.

On the other hand, if we permit the insurance clerks and the corporate interests to frame and govern our policies, state medicine with all of its iniquities may not be so remote from the present as every independent doctor hopes and prays that it may be.

PROCEEDINGS OF THE  
TENNESSEE STATE MEDICAL ASSOCIATION  
NASHVILLE, 1925

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THE ninety-second annual convention of the Tennessee State Medical Association was called to order in Scientific Assembly in the ball room of the Hermitage Club, Nashville, at 9:45 a. m., on Tuesday, April 21, 1925, by the President, Dr. Frank D. Smythe, Memphis.

The President expressed his great pleasure in greeting the members of the Association and proceeded at once with the Scientific program.

Dr. W. K. Sheddan, Columbia, read a paper on "Some Personal Experiences in Parathyroid Therapy." Discussed by Dr. Frank D. Smythe, and in closing by Dr. Sheddan.

Dr. Henry Cox, Nashville, read a paper, entitled "Traumatic Synovitis of the Knee." Discussed by Drs. Henry G. Hill, Memphis; Willis C. Campbell, Memphis; and in closing by Dr. Cox.

At this point Vice President Dr. Julian B. Blue, Memphis, took the chair.

The Secretary, Dr. J. F. Gallagher, Nashville, announced the appointment by the Council of the following Committee on Credentials:

Dr. Wm. F. Clary, Memphis; Dr. E. C. Lindsey, Tracy City; Dr. L. M. Woodson, Gallatin.

This committee was requested to meet at 11:00 o'clock, and the delegates were requested to present themselves before the committee if their credentials had not already been sent in and their badges received.

The Secretary also announced the first meeting of the House of Delegates at 2:00 p.m.

Dr. W. T. DeSautelle, Knoxville, presented a paper entitled "Leukemia," with lantern slides. Discussed by Drs. J. B. McElroy, Memphis; R. B. Wood, Knoxville; and in closing by the essayist.

Dr. Bernard Gaston, Lebanon, presented a paper on "Abdominal Pain." Discussed by Drs. Robert Caldwell, Nashville; Murray B. Davis, Nashville; W. K. Sheddan, Columbia; E. T. Newell, Chattanooga; Frank Ward Smythe, Memphis; A. L. Rule, Knoxville; J. G. Wilson, Rockwood; and in closing by Dr. Gaston.

The Secretary announced that the press wished to secure a group picture of the members of the Association and requested them to assemble in front of the club immediately after adjournment. He also announced the arrangements that had been made for the Dry Clinics on Wednesday morning, the golf tournament and the banquet and entertainment which was to be tendered the Association by the Nashville Academy on Wednesday evening at the Belle Meade Country Club.

Dr. Robert Caldwell, Nashville, read a paper on "The Functions of the Liver." Discussed by Dr. E. T. Newell, Chattanooga; William Litterer, Nashville; J. B. McElroy, Memphis; and in closing by Dr. Caldwell.

Dr. Franklin B. Bogart, Chattanooga, read a paper entitled "Pneumothorax Roentgenographically Considered," with lantern slides. (No discussion.)

Dr. W. K. Sheddan moved to adjourn until 2:00 p.m., the remaining papers on the morning program to be taken up in order until the special order at 2:30.

Motion seconded and carried and the meeting adjourned at 12:40.

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## FIRST DAY

### AFTERNOON SESSION

The afternoon session was called to order by Vice President M. A. Beasley, Hampshire, at 2:10 o'clock.

Dr. Wm. M. McCabe, Nashville, present-

ed a paper entitled "Newer Intestinal Surgery." (No discussion.)

Dr. H. M. Taylor, Jacksonville, Fla., presented a paper entitled "Sinusitis and Swimming, a Further Observation of Etiologic Factors." (No discussion.)

Dr. Perry Bromberg, Nashville, moved that as Dr. Taylor's paper was of such importance to the public as well as the members of the Association, he be requested to give the paper to the Publicity Committee to be published in the lay press.

Motion seconded.

Dr. Taylor demurred, and thought it doubtful whether the laity would get the proper points from the paper. He explained that the entire matter was purely a question of biology and that all the work had been done on the lower animals, and he did not know that the general public would get the right idea from it. The two points of importance in the paper were that even plain water does away with the protective mechanism of the nose, while infected water plays a very significant role in producing various diseases. The other important point was that prolonged bathing lowers the resistance and makes one susceptible to organisms which are ordinarily present, and he feared that the public would not get much benefit from the paper.

Dr. Hilliard Wood, Nashville, amended the motion of Dr. Bromberg, that Dr. Taylor be requested to prepare an abstract of the paper, containing the points which would be of value to the public generally, and submit it for publication in the lay press.

Dr. Bromberg accepted this amendment, and the motion, as amended, was put to a vote and carried.

Dr. K. S. Howlett moved that the Association extend a rising vote of thanks to Dr. Taylor for his very interesting and well prepared paper.

Motion seconded and unanimously carried.

Dr. Watt Yeiser, Columbia, presented a paper on "Sacral Anesthesia." Discussed by Drs. David R. Pickens, Nashville; Rus-

sell A. Hennessey, Memphis; Henry S. Morris, Nashville; and in closing by Dr. Yeiser.

Dr. John E. Hall, Nashville, presented a paper on "Preoperative Factors Influencing the Mortality of Prostatectomy."

Dr. H. L. Fancher, Chattanooga, moved that the paper of Dr. Lyle B. West be read and discussed with Dr. Hall's.

Motion seconded and carried.

Dr. Lyle B. West, Chattanooga, presented a paper on "The Status of Prostatectomy."

These two papers were then discussed by Drs. Tom A. Barry, Knoxville; Joseph H. Smith, Memphis; H. L. Fancher, Chattanooga; George R. Livermore, Memphis; Irving Simons, Nashville; James C. Wilson, Rockwood; Russell A. Hennessey, Memphis; and in closing by Dr. Hall and Dr. West.

Dr. George R. Livermore, Memphis, read a paper entitled "Stricture of the Ureter as a Cause of Irritable Bladder." Discussed by Drs. Thomas D. Hall, Nashville; Perry Bromberg, Nashville; Joseph H. Smith, Memphis; and in closing by Dr. Livermore.

Dr. Perry Bromberg, Nashville, read a paper on "Interesting Urologic Cases," with lantern slides. Discussed by Drs. Russell A. Hennessey, Memphis; Irving Simons, Nashville; George R. Livermore, Memphis; Tom A. Barry, Knoxville; E. T. Newell, Chattanooga; W. S. Anderson, Memphis; and in closing by Dr. Bromberg.

On motion, duly seconded, the meeting adjourned at 5:40 to reconvene at 8:00 p.m.

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## FIRST DAY

### EVENING SESSION

The evening session was called to order at 8:20 by Vice President Julian B. Blue, Memphis.

Dr. William Britt Burns, Memphis, read the Presidential Address of Dr. Frank D. Smythe, as Dr. Smythe was unable to be present.

Dr. Burns: It is with great diffidence that I attempt to present this address to-

night, which has been written by Dr. Smythe. I know that he has given a great deal of time and attention to getting this material together. There are no apologies to be made for the sentiments of the address. Everybody who knows Dr. Smythe knows that he is a militant spirit and is able and willing to stand behind his sentiments. It is without any explanation at all that I read, for him, some observations which he has prepared in the last year. When we elected him President he was a very sick man, but during the year he has been in better health until within the past ten days. He was with us for a few minutes this morning, as most of you know, and is now resting at the home of one of our very good friends, and is in good condition.

(Dr. Burns then read the address.)

Dr. William D. Haggard, President of the American Medical Association, Nashville, addressed the Association on "Periodic Health Examination and the American Medical Association."

D. J. A. Witherspoon, Nashville, moved that the Association go on record as endorsing the views expressed by the President of the American Medical Association, and let the world know that it endorsed this great problem, as the leading light of progress and one of the greatest which the profession could undertake.

Motion seconded, carried, and so ordered.

Dr. Joseph E. J. King, New York City, presented a paper entitled "Recent Advances in Neurological Surgery," with lantern slides.

Dr. Blue, on behalf of the Association, thanked Dr. King for his courtesy in coming to Nashville, and for his splendid presentation.

Dr. Holland McT. Tigert, Nashville, called attention to the movement to erect a suitable memorial to Dr. William Gorgas, and moved that the courtesy of the floor be extended to Dr. Charles N. Cowden in order that he might explain what was being done.

Motion seconded and carried.

Dr. Cowden then explained what was contemplated by the Gorgas Memorial Association and stated that some of the workers were now in Tennessee calling upon the members of the profession. He explained that the campaign was to be carried on through newspapers, magazines and medical journals in order to raise the necessary funds, and urged the hearty support of every member of the Association. He commended the movement as one of the greatest which the profession had ever had an opportunity to participate in.

Dr. J. B. Haskins, Chattanooga, moved that the Tennessee State Medical Association go on record as endorsing this movement.

Motion seconded and carried.

Dr. Charles N. Cowden moved that the Association extend its sympathy and regrets to its President, Dr. Smythe, that he could not be with it on this occasion.

Motion seconded and carried.

On motion, duly seconded, the meeting was declared adjourned at 10:15, to reconvene at 2:00 p.m. Wednesday.

## SECOND DAY

The morning was devoted to diagnostic clinics and demonstrations at Vanderbilt Hospital.

## AFTERNOON SESSION

The fourth general session was called to order at 2:10 p.m. by Vice President Dr. Jesse C. Hill, Knoxville.

The chairman announced that as a special order for this time Dr. John W. Barksdale, Jackson, Miss., would address the Association.

Dr. John W. Barksdale, Jackson, Miss., then addressed the Association on "Some of the Attributes of the Human Mind."

Dr. J. G. Wilson, Rockwood, expressed the opinion that Dr. Barksdale's presentation was worthy of living for a long time, and that it should be published in the State Medical Journal as soon as possible. He moved that this be done.

Motion seconded and carried.

Dr. Hill moved a rising vote of thanks

to Dr. Barksdale for his excellent address.

Motion seconded and unanimously carried.

Dr. E. Dunbar Newell, Chattanooga, read a paper entitled "A Review of the Fractures of the Newell and Newell Sanitarium for the Past Four Years," with lantern slides. Discussed by Drs. S. H. Hodge, Knoxville; Duncan Eve, Jr., Nashville; and in closing by Dr. Newell.

Dr. James W. McClaran, Jackson, presented a paper entitled "Undescended Testes." Discussed by Drs. Lyle B. West, Chattanooga; Tom A. Barry, Knoxville; Joseph H. Smith, Memphis; and in closing by Dr. McClaran.

Dr. R. B. Wood, Knoxville, read a paper entitled "Visceral Reflexes in Diagnosis." (No discussion.)

Dr. Leon L. Sheddan, Knoxville, presented a paper on "Ectopic Pregnancy," with lantern slides. Discussed by Drs. William D. Haggard, Nashville; S. T. Hardison, Lewisburg; and in closing by Dr. Sheddan.

Dr. J. G. Eblen, Lenoir City, read a paper on "Congenital Hypertrophic Stenosis of Pylorus." Discussed by Dr. William D. Haggard, and in closing by Dr. Eblen.

Dr. Murray B. Davis, Nashville, read a paper on "Gunshot Wounds of the Abdomen." Discussed by Drs. H. H. Shoulders, Nashville; Richard A. Barr, Nashville; Henry S. Morris, Nashville; and in closing by Dr. Davis.

Dr. Tom A. Barry and Dr. Ralph Monger, Knoxville, presented a paper entitled "Embryonal Adeno-Myosarcoma of the Kidney (Report of Case)." Discussed by Drs. Buist Litterer, Nashville; Ralph Monger, Knoxville; Irving Simons, Nashville; and in closing by Dr. Barry.

Dr. E. W. Cocke, Bolivar, presented a paper on "The Use of Tryparsamide in the Treatment of Neurosyphilis." (No discussion.)

Because of the lateness of the hour, Dr. A. B. Dancy suggested that his paper, which was supplemental to that of Dr. Cocke, be read by title and published at the same time as Dr. Cocke's.

On motion, duly seconded, the meeting

was declared adjourned at 5:55, to reconvene at 8:30 a.m., on Thursday.

### THIRD DAY

#### MORNING SESSION

The fifth general session was called to order at 9:30 by Vice President Jesse C. Hill, Knoxville.

Dr. H. E. Christenberry, Knoxville, presented a paper on "Otitis Media." Discussed by Dr. W. T. DeSautelle, Knoxville, and in closing by Dr. Christenberry.

Dr. John C. Burch, Nashville, read a paper on "A Splint for Contracted Hand," with lantern slides. Discussed by Drs. A. G. Nichol, Nashville; James S. Speed, Memphis; and in closing by Dr. Burch.

Dr. F. L. Roberts, Tennessee State Board of Health, presented a paper on "Typhoid Innoculation." Discussed by Drs. E. L. Bishop, Nashville; J. C. Wilson, Rockwood; A. L. Rule, Knoxville; William Litterer, Nashville; John A. Witherspoon, Nashville; and in closing by Dr. Roberts.

The Secretary, Dr. J. F. Gallagher, Nashville, reported that the following officers had been elected by the House of Delegates for the ensuing year:

For President: Dr. W. C. Dixon, Nashville.

Vice President: West Tennessee, Dr. J. D. Brewer, Dyersburg; Middle Tennessee, Dr. B. S. Ray, Lebanon; East Tennessee, Dr. F. A. Neergaard, Harriman.

Speaker of the House of Delegates: Dr. H. B. Everett, Memphis.

Secretary: Dr. J. F. Gallagher, Nashville.

Trustee of the Journal: Dr. J. O. Manner, Nashville.

Delegate to the A. M. A.: Dr. John A. Witherspoon, Nashville; alternate, Dr. J. B. McElroy, Memphis.

Dr. Duncan Eve, Sr., escorted the newly elected President to the chair and said:

"As the youngest member of the Association, I have been called upon to introduce your next President. (Applause.) This has been a very unusual meeting—the largest we have ever had. Our new President was chairman of the Committee of Ar-

rangements, and therefore was responsible for much of the success of this unusually fine meeting. I need say nothing further, but desire to introduce Dr. Dixon."

Dr. W. C. Dixon: I wish I were able to make a speech that could adequately express to you my appreciation. I wish to deny Dr. Eve's charge that I was responsible for the success of the meeting. I am sure our Secretary deserves that credit, and that the body of the Association is also largely responsible for the great success. My feelings are so riotous when I think back over the many illustrious men who have held this office that I am greatly embarrassed and feel a great sense of responsibility. I can only say that no president you have ever had has appreciated the honor more than I, and I will do everything possible to keep pace with the traditions that have been established in the past. I sincerely thank you all. (Prolonged applause.)

Dr. Shields Abernathy, Memphis, presented a lantern slide and moving-picture demonstration of "Radium Therapy." Discussed by Drs. Howard King, Nashville; E. Dunbar Newell, Chattanooga; William Litterer, Nashville; and in closing by Dr. Abernathy.

Dr. J. S. Speed, Memphis, presented a paper entitled "Treatment of Spastic Cerebral Paralysis," with lantern slides and moving-picture demonstration. Discussed by Dr. R. W. Billington, Nashville, and in closing by Dr. Speed.

Dr. M. M. Cullom, Nashville, presented a paper on "Para-Nasal Sinus Disease," with lantern slides. Discussed by Drs. H.

H. Shoulders, Nashville; William D. Haggard, Nashville; and in closing by Dr. Cullom.

Dr. Howard King, Nashville, presented a paper on "Idiopathic Multiple Hemorrhagic Sarcoma (Kaposi)," with lantern slides. (No discussion.)

Dr. William C. Chaney, Memphis, presented a paper on "The Diagnosis of Exophthalmic Goiter," with lantern slides. (No discussion.)

The following papers were read by title:

(6) "Case Reports," H. P. Faucett, Columbia.

(25) "A Plea for the Education of the Deaf Child," P. M. Farrington, Memphis.

(28) "The Things That Count," C. P. Fox, Greenville.

(31) "First Aid to Injured Eyes," W. W. Potter, Knoxville.

(32) "The Management of Diabetes of Lesser Degrees of Severity," R. C. Derivaux, Nashville.

(35) "Osteomyelitis," Henry G. Hill, Memphis.

(36) "Tic Douloureux," C. S. McMurray, Nashville.

(38) "A Survey of Hospitals of Less than Fifty Beds in Tennessee," C. N. Cowden, Nashville.

(39) "The Use and Abuse of Caesarean Section," Percy W. Toombs, Memphis.

(40) "Surgical Dyspepsias," John B. Haskins, Chattanooga.

Upon motion, duly seconded and carried, the ninety-second annual convention of the Tennessee State Association was declared adjourned at 1:20 p.m., *sine die*.

# MINUTES OF THE TENNESSEE STATE ASSOCIATION OF RAILWAY SURGEONS NASHVILLE, 1925

MONDAY, APRIL 20, 1925

## MORNING SESSION

**T**HE first session of the Tennessee State Association of Railway Surgeons was called to order in the ball room of the Hermitage Club, Nashville, at 10:45 a. m., Monday, April 20, 1925, by Dr. W. S. Anderson, Memphis.

Dr. Anderson explained that the trains were late and the Section Officers had not yet arrived, and proceeded at once with the Scientific program.

Dr. K. S. Howlett, Franklin, presented a paper entitled "Minor Head Injuries." Discussed by Drs. Jere Crook, Jackson; Wm. Britt Burns, Memphis; Wm. S. Austin, Knoxville; and in closing by Dr. Howlett.

Dr. Duncan Eve, Sr., was requested to take the chair at this time.

Dr. W. S. Anderson, Memphis, presented a paper entitled "Amputations in Industrial Surgery."

Dr. H. B. Everett, Memphis, moved that the paper of Dr. Burns be read and discussed with that of Dr. Anderson.

Motion seconded and carried.

Dr. Wm. Britt Burns, Memphis, presented a paper entitled "The Element of Time; Its Importance in Surgical Procedure of the Seriously Injured and the Seriously Sick."

At this time the Chairman, Dr. E. T. Newell, Chattanooga, arrived and took the chair.

These two papers were then discussed by Drs. Duncan Eve, Nashville; S. C. Woldenberg, Chicago (by invitation); Jere Crook, Jackson; Wm. S. Austin, Knoxville; A. F. Richards, Sparta; L. E. Trevathan, Junction City; Garrett White, Chapel Hill; and in closing by Dr. Anderson and Dr. Burns.

As this completed the program for the morning, on motion, duly seconded, the

meeting adjourned at 12:20, to reconvene at 2:00 p.m.

## AFTERNOON SESSION

The second session was called to order at 2:10 by the Chairman, Dr. E. T. Newell, Chattanooga.

Dr. Duncan Eve, Nashville, presented a paper entitled "Review of Improved Treatment of Certain Fractures." Discussed by Drs. Walter S. Nash, Knoxville; Henry G. Hill, Memphis; W. S. Anderson, Memphis; J. H. Revington, Chattanooga; L. M. Woodson, Gallatin; and in closing by Dr. Eve.

Dr. L. M. Woodson, Gallatin, presented a paper on "Hand Infection." Discussed by Drs. Duncan Eve, Jr., Nashville; Walter S. Clack, Rockwood. (No closing.)

Dr. Willis C. Campbell, Memphis, addressed the Section on the subject of "Arthroplasties," with a motion picture demonstration.

Contrary to custom, this special presentation was thrown open to discussion, and was discussed by Dr. S. C. Woldenberg, Chicago; and in closing by Dr. Campbell.

Dr. E. T. Newell thanked Dr. Campbell on behalf of the Section, and moved a rising vote of appreciation of his splendid presentation.

Motion seconded and unanimously carried.

Dr. Willard Steele, Chattanooga, presented a paper entitled "Foreign Bodies in the Eye." Discussed by Drs. W. W. Potter, Knoxville; Duncan Eve, Nashville; A. F. Richards, Sparta; George H. Price, Nashville; and in closing by the essayist.

As Dr. J. T. Leiper, Lenoir City, was unable to be present, his paper was passed.

Dr. Edward T. Newell, Chattanooga, presented the President's address, entitled "Railway Surgery—A Specialty."

In accordance with custom, this address was not thrown open to discussion.

The Chairman requested Dr. Duncan Eve to announce the plans for sending delegates to the meeting of the American Railway Association.

Dr. Eve stated that the Tennessee Association always sent delegates to the meeting of the American Railway Surgeons, which meets just prior to the meeting of the American Medical Association. He thought well to appoint some one who expected to attend the meeting in Atlantic City to represent the Tennessee Association of Railway Surgeons—some one whom they knew would not make a mistake. This had been done with profit at the meeting in San Francisco and in Chicago.

Dr. Eve further stated that in his opinion delegates should be sent to the meeting of the American Railway Association which always meets in Chicago, because of its central location. The Tennessee Association had never been represented there, but he felt that it would be of much benefit if it could be.

Dr. Duncan Eve, Jr., presented the following letter which had been received from Dr. Louis J. Mitchell, of the American Association of Railway Surgeons:

"April 6, 1925.

"To the Officers and Members of the Tennessee State Association of Railway Surgeons.

"Dear Doctors: The Surgical Journal, now in its thirty-first year, in addition to the papers and discussions at the National Association, publishes those from seven system associations (Rock Island, Northwestern, Illinois Central, etc.), also two State Associations (Georgia and Alabama), and the Pacific Coast Association, as well as the Illinois Society of Industrial Surgeons. During the year, therefore, it contains much material of great interest to all industrial surgeons, especially those engaged in railway work.

"The publishers authorize me to make the following club rate to your Association—namely: a reduction of one-half—a cost to each member of \$1.00 per annum. Of course, at this reduced rate they could not undertake to bill members separately; but if check from your Treasurer is forwarded, with \$1.00 for each name, the Journal will be mailed regularly once a month.

"Trusting you will see fit to take advantage of this offer, I beg to remain,

"Yours very truly,

"(Signed) LOUIS J. MITCHELL, *Editor*."

The chairman asked what action should be taken.

Dr. Duncan Eve, Sr., moved that this matter be deferred until the next regular meeting.

Motion seconded and carried.

#### ELECTION OF OFFICERS

The following gentlemen were elected as Section Officers for the ensuing year:

For President: Dr. W. S. Anderson, Memphis.

Vice President: Dr. Duncan Eve, Jr., Nashville.

Secretary: Dr. E. C. Lindsey, Tracy City.

Dr. Anderson was escorted to the platform, where he expressed his appreciation of the honor shown him, and urged a full attendance in Memphis in 1926.

Dr. Duncan Eve moved that two delegates and two alternates to the meeting of the American Railway Surgeons be appointed by the Chair.

Motion seconded and unanimously carried. The Chairman stated that this would be done a little later.

As this completed the Scientific program and the business of the Section, the meeting was declared adjourned at 5:15, *sine die*.

# MINUTES OF THE EYE, EAR, NOSE AND THROAT SECTION NASHVILLE, 1925

MONDAY, APRIL 20, 1925

MORNING SESSION

Clinics at St. Thomas Hospital

EVENING SESSION

**T**HE first session of the Eye, Ear, Nose and Throat Section was called to order on Monday, April 20, 1925, at 8:45 p. m., by the Chairman, Dr. W. G. Kennon, Nashville.

Dr. J. B. Blue, Memphis, took the chair during the reading of the Chairman's address.

Dr. J. M. Taylor, Jacksonville, Fla., presented a paper, entitled "Sinusitis and Swimming, Further Observations of the Etiologic Factors." Discussed by Drs. M. M. Cullom, Nashville; J. J. Shea, Memphis; J. B. Blue, Memphis; G. C. Savage, Nashville; J. W. Crawford, Somerville; Lloyd Dyer, Greeneville; and in closing by the essayist.

Dr. Arthur J. Bedell, Albany, N. Y., gave a lantern slide demonstration of the use of the slit lantern. Discussed by Dr. J. B. Blue, Memphis; and in closing by the essayist.

Dr. J. B. Blue, Memphis, moved a rising vote of thanks to Dr. Taylor and Dr. Bedell for coming to the meeting and presenting their papers.

Motion carried.

The Chairman announced that clinics would be held at Vanderbilt Hospital on Wednesday morning.

On motion, the Section adjourned at 10:15 p.m.

TUESDAY, APRIL 21, 1925

The second session of the Eye, Ear, Nose and Throat Section was called to order on Tuesday, April 21, 1925, at 9:25 a.m. by the Chairman, Dr. W. G. Kennon, Nashville.

The Chair announced the appointment of the Committee on Nominations as follows:

Dr. W. W. Potter, Knoxville.

Dr. J. W. Wilks, Columbia.

Dr. J. A. Scott, Murfreesboro.

Dr. D. Harbert Anthony, Memphis, presented a paper entitled "Results of Tonsillectomy and Adenoidectomy." Discussed by Drs. W. W. Potter, Knoxville; T. E. Goyer, Jackson; Robert Reeves, Knoxville; S. Lawwill, Chattanooga; R. Patterson, Knoxville; H. E. Christenberry, Knoxville; W. S. Dotson, Lebanon; M. S. Herron, Jackson; C. D. Blassingame, Memphis; J. J. Shea, Memphis; and in closing by the essayist.

Dr. Stewart Lawwill, Chattanooga, presented a paper entitled "When to Do a Simple or Radical Mastoidectomy." Discussed by Drs. C. D. Blassingame, Memphis; R. Patterson, Knoxville; and in closing by the essayist.

Dr. A. C. Lewis, Memphis, presented a paper entitled "Present-Day Operations for Chronic Glaucoma." Discussed by Drs. Herschell Ezell, Nashville; Willard Steele, Chattanooga; G. C. Savage, Nashville; and in closing by the essayist.

Dr. Reese Patterson, Knoxville, presented a paper entitled "Some Mechanical Problems in Connection with Foreign Bodies in Lungs and Esophagus (Report of Cases)." Discussed by Drs. Hilliard Wood, Nashville; Herschell Ezell, Nashville; and in closing by the essayist.

## REPORT OF COMMITTEES

Dr. W. W. Potter made the following report for the Committee on Nominations:

Chairman: Willard Steele, Chattanooga.

Vice Chairman: A. B. Dancy, Jackson.

Secretary: D. Harbert Anthony, Memphis.

On motion, duly seconded and carried, this report was accepted and the Secretary instructed to cast the ballot of the Section for these men.

Dr. Willard Steele then took the chair.

Dr. Willard Steele: It is quite an honor, I assure you, to be Chairman of this Section, because I believe this is the finest Eye, Ear, Nose and Throat Section in the South. I will do my best to be efficient, but it will take help from you men, and I expect it.

Dr. D. Harbert Anthony: I want to thank you for this unexpected honor. I will try to do everything I can to make the next meeting as successful as this.

Dr. A. B. Dancy: I appreciate the honor you have conferred upon me. I will help

Dr. Steele in his efforts to have as good a meeting next year.

Dr. R. H. Newman, Knoxville, presented a paper entitled "Pulsating Exophthalmos." Discussed by Dr. G. H. Price, Nashville, and in closing by the essayist.

On motion duly made and seconded, it was voted to have the paper by Dr. Robert Reeves, entitled "Intra-Nasal Sinus Operation with Special Reference to Nerve-Blocking and After Treatment with Ultra-Violet Light," read at the luncheon.

Meeting adjourned at 12:15 p.m.

## TENNESSEE STATE MEDICAL ASSOCIATION HOUSE OF DELEGATES

The first meeting of the House of Delegates was called to order at 2:10 P. M., April 21, 1925, by the Speaker of the House, Dr. H. B. Everett, of Memphis.

THE SPEAKER: I will ask the Secretary to read the roll-call.

The Secretary then read the roll-call.

CHAIRMAN OF CREDENTIALS COMMITTEE: There are several delegates present without credentials but the Committee is willing that they be seated. These are:

L. S. Nease, Cocke County.

L. E. Edmondson, Giles County.

E. W. Cocke, Hardeman County.

—— Chambers, Scott County.

L. M. Graves, Williamson County.

DR. J. W. SANFORD, Ripley: I move that they be seated. (Motion seconded and carried.)

CHAIRMAN OF CREDENTIALS COMMITTEE: Dr. N. R. Newman, of Tipton County, did not present credentials and as I understand, was not elected as a delegate but considered to be one if the House would seat him.

DR. JERE CROOK, Jackson: I move that he be seated as a regular delegate. (Motion seconded and carried.)

DR. J. F. ADAMS, Bradyville: I move that Dr. W. T. Robinson be seated for Rutherford County. (Motion seconded and carried.)

THE SPEAKER: The delegates present have been seated. There is a quorum present and we shall proceed to business. The first order of business will be the reading of the minutes of the previous meeting.

THE SECRETARY: It has been customary to offer as the minutes of the last meeting the minutes as published in the April issue of the Journal.

DR. W. K. SHEDDAN, Columbia: I move that the minutes as published be accepted as the official minutes. (Motion seconded and carried.)

THE SPEAKER: The next order of business is the selection of the Nominating Committee from the three grand divisions of the state. It is customary at this time for the House to adjourn for a few minutes to allow the members from Middle, West and East Tennessee to select a Nominating Committee of three from each grand division. The Committee is instructed to not make public their choice of officers until Thursday morning when the Chairman will make his report to this body, after which the election will take place. (The House then adjourned for ten minutes.)

The House was then called to order and the following committees were announced:

East Tennessee: L. S. Nease, Newport; J. S. Wilson, Rockwood; J. A. Hardin, Sweetwater.

Middle Tennessee: R. B. Gaston, Lebanon; R. W. Billington, Nashville; R. L. Jones, Nashville.

West Tennessee: E. W. Cocke, Bolivar; Shields Abernathy, Memphis; J. W. Sanford, Ripley.

THE SPEAKER: I would suggest that the Nominating Committee hold a meeting immediately after the adjournment of this House.

DR. S. R. MILLER, Knoxville: I would suggest that the Chairman or Secretary furnish the Committee with a list of the officers who are to be nominated.

THE SPEAKER: We will furnish such a list immediately.

DR. R. L. JONES, Nashville: How many names are necessary for the Nominating Committee to present?

THE SPEAKER: Three for President and one for each of the three Vice-Presidents.

CHAIRMAN OF CREDENTIALS COMMITTEE: I find after reading this list of delegates who did not have their credentials that we have seated Dr. Chambers, from Scott County, but I understand they have no organization in that county.

DR. CHAMBERS: We have an organization in Scott County.

THE SPEAKER: We will have the Secretary's report.

### SECRETARY'S REPORT

To the House of Delegates of the Tennessee State Medical Association.  
Gentlemen:

This meeting marks the ninety-second mile stone in the annual session of our Association, and the second year of my active connection in the capacity of Secretary-Editor. The past year has been a successful and pleasant one, certainly in so far as the Secretary's office is concerned and its relation with the profession of the State. By the very nature of the office, decisions must be reached and action taken; and when occasion has arisen for such action, council and advice is sought and used wherever possible, to the end that the interest of the Association be conserved and the greatest good come to the greatest number of its membership.

It is known to all of you that the annual meeting was postponed one week and this in contravention to the mandates of the Constitution and By-Laws. When it became known that Nashville would be overcrowded by the reunion of the Scottish Rite bodies of the State, the secretary's office communicated by telegram, telephone or in

person with all of the officers of the State Association. Also several ex-presidents and others were communicated with to aid in a decision in the matter. In all, approximately thirty-two members who had the interest of the Association at heart were heard from and almost without a single exception all agreed that it was the part of wisdom to postpone the meeting. This action threw a great burden of additional work on the secretary's office.

So that there might not be any confusion as to the exact date of meeting, the news was given to the Associated Press and it was published in about fifteen leading daily newspapers of the State. The Journal of the American Medical Association and the Southern Medical Journal were asked to run the statement in their Journals, which they did. The State Journal was at the time on the press. Its publication was stopped, a large advertisement inserted, making note of the fact, and the new dates published on the front cover. To be absolutely sure that the change of date would be known to every member, a letter was sent to each individual.

It was feared by the secretary that the sudden change of date might interfere with the attendance of the invited guests and lessen the number of exhibitors. Only one guest, who had been previously invited, found that the change of date made it impossible for him to attend. Instead of decreasing the number of commercial exhibits, I am glad to state to you that we have a larger number of exhibits that it has ever been our good fortune to have.

The books of the Association show that the enrollment for the past year was 1,545. This is a decrease in 38 members. This may be explained by the fact that the following counties did not report last year: Chester, DeKalb, Franklin, Fayette, Hardin, Marion and Morgan. The preceding statement should be food for thought for the Councilors of the districts in which these counties are found. Our books show that the following counties did report for 1924: Anderson, Bedford, Blount, Bradley, Campbell, Carroll, Cocke, Coffee, Cumberland, Crockett, Davidson, Decatur, Dickson, Dyer, Gibson, Greene, Grundy, Giles, Hamilton, Hamblen, Hawkins, Haywood, Hardeman, Henderson, Henry, Hickman, Jackson, Jefferson, Knox, Lauderdale, Lake, Loudon, Lincoln, Lawrence, Macon, Madison, Marshall, Maury, Monroe, Montgomery, McMinn, McNairy, Overton, Obion, Putnam, Polk, Rhea, Robertson, Roane, Rutherford, Sevier, Scott, Shelby, Smith, Sullivan-Carter-Johnson, Sumner, Tipton, Washington, Warren, Weakley, White, Wilson, and Williamson.

During the past year charters were issued to Lawrence and Unicoi counties. Lawrence county has an active medical society but Unicoi county never acknowledged the receipt of the charter

nor was a report of membership received in the secretary's office.

At the ninety-first annual session held in Knoxville, a committee composed of your secretary as chairman, with Dr. S. R. Miller and Dr. A. F. Richards was appointed to revise and codify the Constitution and By-Laws. Taking as a basis the last publication of the Constitution and By-laws in pamphlet form, which was in 1918, a careful search was made of the minutes of the House of Delegates for each succeeding session up to and including 1924. These were inserted in their proper places and copies of the revised document sent to Drs. Miller and Richards for their inspection and approval. Dr. Richards approved entirely the revision as submitted to him but Dr. Miller wrote that he had drafted a revision which I have not seen. I would recommend, as the only practicable way of definitely settling this matter, to have this committee continued and the draft of the Constitution and By-laws as decided upon by them be final and that said draft be published in pamphlet form and distributed to the membership.

At the session held last year your secretary was instructed to find out, if possible, the sentiment of the profession of the State as to the need and desire on their part of graduate medical instruction in communities remote from medical centers. It being manifestly impossible for your secretary to visit each county medical society, as an alternative the regional medical societies were visited and the matter presented to the membership. On the whole the idea was enthusiastically received and only two dissenting voices were heard to the proposition as presented; one member in West Tennessee and one member in Middle Tennessee. Judging by the experience of other states, a great deal of time and some expense must be incurred to make this enterprise a success. If the plan is to be inaugurated the State Society must agree to underwrite the expense from its treasury. A committee should be appointed to work out a plan and curriculum and with the power to employ a field director to take over the active management. If this project is as successful in Tennessee as it has been in other states, graduate medical instruction can be made self-sustaining.

By reason of the fact that the American Medical Association at the Chicago session made a re-apportionment of delegates for the current year, our association will be allowed only two delegates for the coming session of the A. M. A. to be held in Atlantic City in May, 1925. This re-apportionment for a period of three years will be acted upon at Atlantic City on the basis of an increased membership of the House of Delegates from one hundred and fifty to one hundred and seventy-five. In a communication from Dr. Olin West, he states that the new re-apportionment will make it probable that Tennessee may be entitled to three

delegates for the succeeding three years.

I would call your attention to the statement of funds on hand in the Treasurer's report. It will be seen there is a net balance cash on hand as of March 31, of \$12,757.01, an increase of \$2,658.72 over the corresponding period of last year. This surplus has increased notwithstanding the increase in my salary and that of my secretary as well as an unusual expenditure by the Committee on Public Health and Legislation.

In conclusion allow me to take this opportunity to express publicly my sincere appreciation of the ability and efficient effort of my assistant, Mrs. Frances P. Boner. I say without hesitation that whatever may have crowned the efforts of this office, both in the publishing of the Journal and executing the many other duties of the office of the secretary, is due in no small measure to her loyalty and efficiency.

Respectfully,

J. F. GALLAGHER, Secretary.

DR. J. W. SANFORD, Ripley: I move that this report be adopted and placed on file. (Motion seconded.)

THE SECRETARY: There are two or three things in the report that I have offered for your consideration. I think it would be a good thing to refer it to a committee.

DR. W. K. SHEDDAN, Columbia: I move that the Chair appoint a committee of three to act on the suggestions. (Motions seconded.)

DR. J. W. SANFORD: I withdraw my motion.

THE SPEAKER: As to the committee, I would suggest that it be referred to the Councilors.

DR. S. R. MILLER, Knoxville: Would it not be better to refer it to the Trustees as there is a question of funds to be expended?

THE SPEAKER: It is not merely a question of funds. I suggested the Councilors because Journal, with possibly a few corrections as to that gives an especially large committee.

DR. W. K. SHEDDAN: I withdraw my motion.

DR. J. O. MANIER, Nashville: I move that the report be referred to the Councilors for consideration. (Motion seconded by Dr. W. K. Sheddán and carried.)

THE SPEAKER: Dr. Miller will call a meeting of the Councilors at 5 o'clock.

#### REPORT OF THE TREASURER

Dr. J. O. Manier

Dr. J. O. Manier, Treasurer, Tennessee State Medical Association, Nashville, Tenn.

Dear Sir: Pursuant to engagement, we have made an examination of the cash book of the Tennessee State Medical Association kept in the office of the Association in Nashville, for the fiscal year from April 1, 1924, to March 31, 1925, and submit herewith our statements of receipts and disbursements for the period, and of funds on hand March 31, 1925, as shown by the books.

#### Funds on Hand—Schedule A

Schedule A shows funds on hand at beginning of period of \$10,098.29, increased by excess of receipts over disbursements for the year of \$2,658.72, to the balance of \$12,757.01 at March 31, 1925. This balance is on deposit, being the balance shown by the March 31, 1925, statement of the American Trust Co., reconciled to the amount by the deduction of \$138.00 for checks outstanding.

#### Receipts and Disbursements—Exhibits A-1 and A-1-a

Receipts for the year total \$11,921.12, exceeding the total disbursements of \$9,262.40 by \$2,658.72 as above mentioned. Detail of receipts and disbursements is shown on Exhibit A-1.

A separate statement of receipts and disbursements for the Medical Journal is shown on Exhibit A-1-a. The cost of printing and postage is for eleven issues only, the March, 1925, number not having yet been issued. Disbursements exceed receipts by \$1,094.62. The figures on this statement are included in those on the general receipts and disbursements statement—Exhibit A-1.

The additions and forwardings in the cash book were verified for the year and disbursements accounted for by the cancelled checks returned by the bank and the checks outstanding at March 31, 1925, as shown by the stubs. All items were found properly entered in the cash book. The total receipts as shown by the cash book agree with the total deposits for the year as shown by the bank's statements.

Respectfully submitted,

HOMER K. JONES & CO.,

Certified Public Accountants.

Nashville, Tenn., April 4, 1925.

#### Statement of Funds on Hand, March 31, 1925

|  |             |
|--|-------------|
| Balance in bank March 31, 1924, per audit report .....       | \$10,098.29 |
| Add excess of receipts over disbursements, Exhibit A-1 ..... | 2,658.72    |

|                                   |             |
|-----------------------------------|-------------|
| Funds on hand March 31, 1925..... | \$12,757.01 |
|-----------------------------------|-------------|

Reconcilement of account with American Trust Co., March 31, 1925:

|   |             |
|---|-------------|
| Balance per bank's statement, March 31, 1925--- | \$12,895.01 |
|---|-------------|

Less outstanding checks:

|                                   |         |
|-----------------------------------|---------|
| No. 173—To Dr. S. R. Miller ..... | \$49.00 |
|-----------------------------------|---------|

|  |      |
|--|------|
| No. 174—To Central Press Clipping Bureau ..... | 3.00 |
|--|------|

|  |       |
|--|-------|
| No. 175—To Mrs. Frances P. Boner ..... | 50.00 |
|--|-------|

|                                   |        |        |
|-----------------------------------|--------|--------|
| No. 176—To Dr. S. R. Miller ..... | 36.00— | 138.00 |
|-----------------------------------|--------|--------|

|                                     |             |
|-------------------------------------|-------------|
| Balance per books, March 31, 1925-- | \$12,757.01 |
|-------------------------------------|-------------|

# **Receipts and Disbursements from April 1, 1924, to March 31, 1925, Inclusive**

| Receipts   |             |          |
|--|-------------|----------|
| From dues -----  | \$ 6,668.00 |          |
| From Medical Defense----   | 1,162.00    |          |
| From advertising -----   | 3,877.42    |          |
| From interest on bank bal-<br>ance -----                           | 213.70      |          |
| Total receipts—Exhibit<br>A-1-a -----                              | \$11,921.12 |          |
| Disbursements  |             |          |
| Dr. S. R. Miller, chairman<br>Medical Defense -----                | \$ 1,168.00 |          |
| Medical Journal (11 issues):<br>Printing -----                     | \$2,873.46  |          |
| Postage -----  | 182.77      |          |
| Press Clipping Service----   | 36.00—      | 3,092.23 |
| Convention expense, 1924:<br>Medical Reporter -----                | 421.44      |          |
| Programs -----   | 79.00       |          |
| Badges -----   | 62.28       |          |
| Expenses, Dr. J. F. Gal-<br>lagher and Mrs. Boner                  | 98.16—      | 660.88   |
| Convention expense, 1925-  |             | 10.98    |
| Salaries:<br>Dr. J. F. Gallagher, Sec-<br>retary -----             | 1,458.37    |          |
| Dr. J. O. Manier, Treas-<br>urer -----                             | 100.00      |          |
| Mrs. Frances P. Boner----  | 1,200.00—   | 2,758.37 |
| Delegates to A. M. A. con-<br>vention expense allow-<br>ance ----- |             | 150.00   |
| Office rent -----  |             | 180.00   |
| Stationery, printing and<br>office supplies -----                  |             | 105.75   |
| Postage -----  |             | 103.00   |
| Telephone -----  |             | 39.16    |
| Dues refunded (overpay-<br>ments) -----                            |             | 45.00    |
| Auditing -----   |             | 27.50    |
| Towel service -----  |             | 12.00    |
| Insurance on office furni-<br>ture, 3 years -----                  |             | 16.88    |
| Repairs to typewriter -----  |             | 8.50     |
| Councillor's expense -----   |             | 6.30     |
| Legislative Committee, Dr.<br>H. H. Shoulders, chair-<br>man ----- |             | 877.85   |
| Total disbursements -----  | \$ 9,262.40 |          |
| Excess receipts over dis-<br>bursements, to Sched-<br>ule A -----  | \$ 2,658.72 |          |

## **STATEMENT OF RECEIPTS**

**From April 1, 1924, to March 31, 1925, Inclusive**  
**T. S. M. A.**

| 1924            | Dues       |
|-----------------|------------|
| April -----     | \$1,260.00 |
| May -----       | 84.00      |
| June -----      | 82.00      |
| July -----      | 84.00      |
| August -----    | 54.00      |
| September ----- | 64.00      |
| October -----   | 24.00      |
| November -----  | 20.00      |
| December -----  | 372.00     |
| 1925            |            |
| January -----   | \$1,112.00 |
| February -----  | 1,076.00   |
| March -----     | 2,436.00   |
|                 | \$6,668.00 |

| Medical<br>Defense | Adver-<br>tising | Interest on<br>Bank Balance | Total       |
|--------------------|------------------|-----------------------------|-------------|
| \$ 235.00          | \$ 409.42        | \$ 213.70                   | \$ 2,118.12 |
| 11.00              | 285.57           |                             | 380.57      |
| 13.00              | 371.45           |                             | 466.45      |
| 13.00              | 339.15           |                             | 436.15      |
| 7.00               | 323.84           |                             | 384.84      |
| 5.00               | 242.89           |                             | 311.89      |
| 4.00               | 293.20           |                             | 321.20      |
| 5.00               | 327.54           |                             | 352.54      |
| 80.00              | 426.02           |                             | 878.02      |

|        |        |          |
|--------|--------|----------|
| 221.00 | 398.82 | 1,731.82 |
| 237.00 | 213.96 | 1,526.96 |
| 331.00 | 245.56 | 3,012.56 |

|            |            |           |             |
|------------|------------|-----------|-------------|
| \$1,162.00 | \$3,877.42 | \$ 213.70 | \$11,921.12 |
|------------|------------|-----------|-------------|

## **SPECIAL STATEMENT OF MEDICAL JOUR- NAL—RECEIPTS AND DISBURSE- MENTS**

**From April 1, 1924, to March 31, 1925, Inclusive**  
**Receipts**

|                   |            |
|-------------------|------------|
| Advertising ----- | \$3,877.42 |
|-------------------|------------|

### **Disbursements**

|  |            |
|--|------------|
| Printing (eleven issues) ---               | \$2,873.46 |
| Salary, Dr. J. F. Gallagher--              | 1,458.37   |
| Medical Reporters at con-<br>vention ----- | 421.44     |
| Postage (eleven issues)----                | 182.77     |
| Press Clipping Service----                 | 36.00      |

|                           |            |
|---------------------------|------------|
| Total disbursements ----  | \$4,972.04 |
| Excess of disbursements-- | \$1,094.62 |

DR. W. S. ANDERSON, Memphis: I move that the report be accepted and referred to the Auditing Committee. (Motion seconded and carried.)

THE SPEAKER: I will appoint on the Auditing Committee Drs. W. S. Anderson, Memphis; E. T. Newell, Chattanooga, and A. F. Richards, Sparta.

The next order of business is the report of the Standing Committees.

## **REPORT OF COMMITTEE ON MEDICAL EDUCATION**

**Dr. J. B. McElroy**

There are many phases of medical education which might be discussed in this report, but we desire to center our attention on the one which seems to be in the limelight at the present time, viz., the effect of medical education on the distribution of physicians in the United States and more especially the influence of present medical educational standards on the medical service received by the rural population of the country. This subject has been accentuated by the articles of Dr. William A. Pusey on "Medical Education and Medical Service," published serially in the Journal of the American Medical Association from January 24th to February 21, 1925, inclusive. The following seem to us to be some of the outstanding statements in Dr. Pusey's articles. "In short, the evidence is accumulating that we are producing only a very costly sort of physician and are not now producing men to do the ordinary service of medicine for ordinary people in the cities of the country"; "The country practitioners, now as

a rule, are relatively old men;" "Young men are not to be found in the country in sufficient numbers to keep down the average, that is, young men are not going to the country in sufficient numbers to fill vacancies."

For the shortage of physicians in rural districts, Dr. Pusey discards the explanations, such as no shortage argument, the per capita argument, the distribution argument, the healthier condition argument, the full schools argument, advanced from various sources, and states, "the chief and determining cause for it is the excessive cost of medical education." Dr. Pusey recommends as a remedy a reduction in the expensiveness of medical training, by lowering the present standards of medical education whereby a high school education is regarded as sufficient to enter upon the study of medicine and four years of medical training will be sufficient to produce enough doctors who will go to the country to meet the demands adequately. I think that one may fairly state Dr. Pusey's view in a nutshell, as expressed in the series of articles referred to, that the present shortage of physicians in rural districts is chiefly due to the present standards of medical education, viz., four years of high school, two years of college, including physics, chemistry and biology and four years in an accredited medical college. That there is a shortage of physicians in rural districts is very generally agreed but there is very strong dissent from the view that this is due to the present standards of medical education. We think that if one will read carefully the report of Mayers and Harrison from the General Education Board that one will not escape the conviction that the shortage is due rather to economic and social factors than to the present standards of medical education. Pearl, in the Journal of April 4th, supports them from a scientific statistical consideration of the conditions as they exist. Pearl states, "It seems to me, with all due respect for the argument in favor of the view I am opposing, improbable that the physician's behavior in this matter will be essentially altered by giving him a cheaper medical education. Some have argued that by definitely shortening the time of medical education, the situation and tendencies under discussion will be changed for the better. It seems to me that this argument can be logically maintained only in the assumption that a lowering of the standards of medical education will attract into the profession persons who are so mentally debased and generally idiotic that they will not display that degree of common sense in the conduct of their individual economic lives, as evidenced by their geographic distribution, that we see every day by common laborers, chiropractors or even college professors. My argument is that after a young medical man gets out in the world, and by hard experience learns economic wisdom, his behavior thereafter relative to location will not be differ-

ent according to whether his education was expensive or cheap." Some of our own statistical history might be interesting in this connection.

In 1906 when the product of our, I will not say diploma mills, but medical schools, which were doing the best they could under the adverse circumstances of admittedly low standards, the number of physicians in the state of Tennessee was about 3,000; they gradually rose to about 3,400 in 1918 and fell to 3,200 in 1923. The proportion of physicians to population in 1906 was one to 700; in 1918, a little less than one to 700; in 1923, one to 750. More interesting are the figures for each county in the state as to number of physicians, age of physicians and the proportion to population.

(Not furnished.—Ed.)

It is further interesting to state that the College of Medicine of the State University is full to capacity and I think this is also true of the College of Medicine of Vanderbilt University. No less interesting is the fact that there are in the 15 colleges of the state giving the requisite pre-medical training 190 students, more than enough to tax the present capacity of the medical schools, to say nothing of those who come to us meeting the requirements from surrounding states. I may state that the first year medical class of the State University will be filled with entirely Tennessee students in 1925 and 1926.

Finally, Dr. Hyman, to whom I am indebted for the above statistics, has furnished me with the following list:

"Graduates University of Tennessee College of Medicine in the classes of 1914-1922, both inclusive."

|  |     |
|--|-----|
| Total number of graduates.....   | 373 |
| No record of present location.....                                     | 33  |
| Total considered in this analysis.....                                 | 340 |
| Graduates coming from small towns and rural districts .....            | 252 |
| Graduates coming from larger towns and cities .....                    | 88  |
| Graduates coming from villages, returning to villages .....            | 202 |
| Graduates coming from cities and returning to cities .....             | 65  |
| Graduates coming from villages, returning to city .....                | 50  |
| Graduates coming from city, returning to village .....                 | 23  |
| Percentage of graduates originally coming from villages .....          | 73  |
| Percentage of graduates returning to home communities to practice..... | 79  |

The records prior to 1914 would increase the proportion of graduates from villages and of graduates from villages returning to villages but these records are not in such shape to afford any easy analysis. Graduates of classes subsequent to 1922 do not appear in the latest American Medical Directory.

From these figures which represent the conditions in Tennessee, I think it will be apparent that what we need is not a lowering of the standard of

medical education but increased capacity for taking care of those who are willing to conform to the present requirements, which personally, we think are neither too high nor too low.

DR. A. F. RICHARDS, Sparta: I think it would be well to accept this report and have it filed with the Secretary and published in the the statistics as read. I believe the facts are a little different to the figures in some instances but in the main it is correct. I can only speak definitely of a very limited territory of the state, that is my own county. In 1923 we did not have eighteen doctors which he has recorded in this report. The figures have not been changed but the number of doctors has been changed. The population he gives as 400, whereas it is something like 1,000. If that maintains all over the state the figures are a little incorrect. I regard this, however, as the finest report ever made. It is an important subject. The public is interested in it more than in any other subject and the legislature has lost more sleep over it than over any question that has come up. The fact that there is a decreasing number of medical students entering college is due to this, that the young men of the country are going in the direction of the least resistance and making their living through other channels.

I move, Mr. Chairman, that this report be adopted, that it be filed with the Secretary and published in the Journal, with this exception that it first be censored and any mistakes in figures corrected. (Motion seconded.)

DR. J. B. McELROY: These statistics were compiled by the Registrar of the University from the A. M. A. directory.

DR. J. W. SANFORD: Lauderdale County has only 24 doctors and there are 40 on this report. We really have 21 active doctors. I am in favor of raising the standard not lowering it.

DR. W. K. SHEDDAN: To my mind this is the most important case that has come up before this Association. Dr. Pusey in his articles in the Journal of the American Medical Association has shown up the conditions that exist in the rural districts of this country. There is no use trying to hide it, the rural community of this country is suffering from lack of medical attention. The University of Tennessee even with its high standards has never produced the equal of the men who were graduated in the early days and most of those men were from the country.

DR. J. B. McELROY: Fifty-three per cent. of the graduating class were from the rural communities.

DR. W. K. SHEDDAN: What do you call a rural community?

DR. J. B. McELROY: Fifteen hundred or less.

DR. W. K. SHEDDAN: This subject was discussed recently in the Journal of the American Medical Association. The Dean of the University of Virginia made the statement that out of a class

of 52 graduates last year there were only two who came from the rural community. In my opinion there should be a Board of Examiners to pass on candidates for a medical license and if a man can pass that examination it need not matter what school he comes from. We are making it too hard for the country boy to study medicine. When I moved to the county where I now live in 1878 there were 60 practicing physicians; today there are only 33 and about three or four of them are specialists. Even with the good roads there are many places where there is no doctor within a radius of 40 miles.

DR. A. F. RICHARDS: There is a motion before the House.

THE SPEAKER: Who is to censor this report?

DR. A. F. RICHARDS: The Secretary.

DR. W. F. CLARY: I would suggest that any man who noted an error in the number of doctors in his county send in the correct figures to the Secretary.

DR. W. J. BREEDING, Sparta: In this report there is just such information as the public has been clamoring for. They want to know the number of physicians we have in the state who are in practice. This report goes into this very thoroughly. It seems to me this is just such information as the public ought to have. I think it ought to be published in the lay papers.

DR. J. B. McELROY: Dr. Hyman is now making a map of each county to determine accurately the distance each physician is from his clientele. I think when we get this map and get these figures corrected that it could be published.

DR. L. L. SHEDDAN, Knoxville: While I can agree with Dr. McElroy in his report, there are just a few things that have come to my observation in connection with the University of Tennessee at Knoxville. There are now studying in the pre-medical courses in the University of Tennessee about 100 students. We have also in that part of the state some three or four other colleges giving pre-medical courses. I happen to know a great many of these pre-medical students and I know quite a number are from the rural districts. It seems to me the problem is more a question of providing facilities for the men who desire a medical education but have not the means. Again, as I have talked to Dr. Morgan, the President of our University, I can see no justice in the world in giving civil engineers, farmers, etc., free education and then saddling the expense upon the fellow who wants to study medicine. It seems to me there is a discrimination in Tennessee against that particular class of students. Why it is I do not know. It does seem to me if they are going to require certain things in Tennessee for the young man to study medicine, they should make some provision for his securing the necessary funds. I happen to have been in the House of Delegates of the American Medical Association a few times and I know

this thing is very seriously being considered by the Committee on Medical Education of the American Medical Association. They realize there is something wrong somewhere with the present curriculum of educating young men for the practice of medicine and I think that in a reasonable length of time there is going to be a change or probably some reduction in the course. We all realize that they are trying to turn out every man a specialist, that they are dwelling too much on the special branches. That was stressed in the House of Delegates at the St. Louis and San Francisco meetings. I know they are making an honest effort to arrive at some conclusion. Our President Morgan desires to set aside a fund, a rotating fund, to loan to young men who want to practice medicine in the State of Tennessee. We can not pass a law compelling a man to practice medicine in any particular section of the state, but we can put the men on their honor, that if the state furnishes them funds for attending medical college they will practice in the rural districts for a certain length of time. This plan is only in a formative state, I do not know whether anything will be done. It seems to me the question is not one of lowering the standard of medical education but of putting it up to the medical colleges to provide facilities for students who want to enter medical colleges. I made quite a little investigation along this line and found quite a number of schools in the United States who are turning away men who want to enter medical college. If this is the case, why lower the standard? I do not think any one, even my brother, has any idea of lowering the standard. I think the biggest thing is that there is a tendency to educate every boy who goes to medical school as a specialist rather than as a general practitioner. That is an error. If a man wants to practice a specialty let him take it up as post-graduate work. It seems to me this is an unbalanced curriculum. When a young man goes to the country he is not prepared to practice medicine in the surroundings in which he is put. He has no means of making a diagnosis by the means he was taught. He has to rely on clinical manifestations of disease and he is not able to do that. He is handicapped and he feels he is at a loss to practice medicine. I believe Dr. McElroy will agree that there is an unbalanced curriculum.

DR. C. N. COWDEN, Nashville: This afternoon has been one of statistics. A few years ago I had occasion to look up statistics of one of the greatest aggregations of surgical talent on the globe, the Southern Surgical Association. There was less than 5 per cent of that organization with more than an M. D. after their names. The reason young men are not going to the country is that they can not practice medicine in the country to save their lives. The men they are turning out today when you take them away from an

x-ray machine, from a laboratory, they cannot practice medicine and they cannot carry these things with them to the country. I do not want to lower the standards but something must be done for the country.

DR. A. F. RICHARDS: I think Mr. Speaker that this discussion is going a little astray from my motion. I insist on my motion and call for the question.

THE SPEAKER: Dr. Richards' motion is before the House. (Motion carried.)

DR. L. L. SHEDDAN: What does Dr. McElroy think?

DR. J. B. McELROY: I agree with the criticism. When I tell you that in Ophthalmology and the other specialties at the University of Tennessee at the present time there are only 11 hours, you will see that a man cannot become much of a specialist in that time. Our men can go to the country to practice.

#### REPORT OF COMMITTEE ON SCIENTIFIC WORK

Dr. J. F. Gallagher

I offer the program of the meeting as the report of the Committee on Scientific Work.

I want to take this opportunity of expressing my thanks and appreciation to the other members of the Committee, Dr. J. C. Hill, Knoxville; Dr. A. F. Cooper, Memphis, and Dr. G. V. Williams, of Chattanooga, for their very valuable aid in getting up this program.

I would like also to express my sincere thanks to the local doctors for their co-operation and aid in arranging the clinical program to be held in Vanderbilt Hospital tomorrow. I am frank to say that without their assistance the program would not have been what it is.

DR. J. W. SANFORD: I move the report be adopted. (Motion seconded and carried.)

#### REPORT OF COMMITTEE ON MEMORIALS

Dr. J. F. Gallagher

I regret to report that I got scant co-operation from the profession in this work. Every month I publish a list of the doctors who have died whether they are members of the State Association or not on the grounds that it is news. I have to get these reports as a rule from newspaper clippings that I subscribe for. Occasionally a county Secretary will send me a resolution offered at a meeting of his County Society. As a rule these come in so late that I have already published the notice of the death and therefore the resolution is a rehash. The Secretaries are not to blame for their societies do not meet frequently and therefore they cannot send in the resolutions adopted promptly. I think, however, the county secretary might be a little more alert and send in a report of deaths. In this report I will only read to you the deaths of members of the State Association. When we find a death our list is looked over and also the A. M. A. direc-

tory to find the year of graduation, college and age.

W. H. Eblen, Petros, Loudon County.

James E. Green, Chattanooga, Hamilton County.

Dr. L. F. Ferguson, Gates, Lauderdale County.

Dr. J. R. Puryear, Weir, Wilson County.

Dr. Charles M. Lane, Maryville, Blount County.

Dr. James O. Hardin, Springhill, Maury County.

Dr. E. A. Quinn, Cleveland, Bradley County.

Dr. F. E. Wyatt, Yorkville, Gibson County.

Dr. C. L. Hackworth, South Pittsburg, Marion County.

Dr. Albert E. Lea, Athens, McMinn County.

Dr. L. A. Copenhaver, Englewood, McMinn County.

Dr. Newton C. Ellis, Friendsville, Blount County.

Dr. W. W. Kimsey, Ducktown, Polk County.

Dr. E. F. Dodson, Harriman, Roane County.

Dr. Joseph H. Venn, Memphis, Shelby County.

Dr. S. D. Terrill, Memphis, Shelby County.

Dr. Marcus Hasse, Memphis, Shelby County.

Dr. Wm. G. Somerville, Memphis, Shelby County.

Dr. John J. Gee, Chattanooga, Hamilton County.

Dr. Samuel D. Acuff, Knoxville, Knox County.

Dr. R. A. Grainger, Paris, Henry County.

Dr. W. M. Crockett, Donelson, Davidson County.

Dr. R. A. Harrington, Nashville, Davidson County.

Dr. Deering J. Roberts, Nashville, Davidson County.

Dr. W. W. Taylor, Memphis, Shelby County.

DR. W. B. BURNS, Memphis: I move that the report be accepted and filed. (Seconded.)

THE SPEAKER: If any one knows the name of any members of the Society who have died within the year and who were not on the list, kindly let the Secretary know.

The motion of Dr. Burns was carried.

Adjournment until 9 a. m. Wednesday.

### WEDNESDAY MORNING SESSION

The Wednesday morning session was called to order at 9:20 A. M. by the Speaker of the House.

### REPORT OF THE COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller

(Copy of report not received.—Ed.)

DR. L. L. SHEDDAN: I move that the report be received and spread on the minutes.

DR. W. K. SHEDDAN: It seems to me Dr. Miller has made some suggestions that the Society should take some notice of; for instance, the suggestion of transferring this matter to the officers of the Association rather than leaving it in the hands of the Committee; that every man pay the medical defense fee of \$1.00. In my county our entire Society adopted it. If some one in

the county would take some interest and put some one in charge of this work, every man would be a member. I think some action should be taken regarding Dr. Miller's suggestion. It is a poor compliment to pay Dr. Miller to simply file his report. I believe a large percentage of the suits are instigated by members of our own profession and that is why there are so many non-suits. In our county in the last five years only one suit has been brought. This was against a young man but the entire profession of the county got behind him and fought the suit.

DR. M. A. BEASLEY, Hampshire: Regarding the case Dr. Sheddman mentioned, I want to show him how this fund operates. This young physician had not paid his annual dues and consequently his medical defense fee was not paid, but our Society had guaranteed his defense fee and therefore it made it binding in this work. Of course, he paid it before his time was out, which was the first of April. His defense was taken up by the Committee which relieved him of a great deal of worry. I am highly in favor of the resolution to have each county guarantee this defense fee.

DR. J. W. DANLEY, Lawrenceburg: I wish to ask for information—if it is not a fact that if a man carries insurance in an old line company and gets a judgment, if they would not still pay a proportionate part of this judgment? In other words, would not this committee pay a part of the defense fee?

THE SPEAKER: The insurance companies so far as I know have not yet questioned a judgment. They have called on the committee at times to pay part of the attorney's fee.

DR. MILLER: They have called on us to pay the attorney's fees but we have not done so.

THE SPEAKER: They seem to take that as moral support.

DR. T. R. RAY, Shelbyville: Dr. Miller brought up an important point in regard to the amount. If we are to carry on this work we ought to establish a maximum amount that this committee will pay to each court. I think it will obviate any disturbance such as the Doctor brought out in his report.

DR. S. R. MILLER: That could hardly be done because there are no two causes exactly alike. Our lawyers take the cases because we give them intelligent co-operation and pay our fees promptly. As far as the fees are concerned, I do not think they are commensurate with the service. This thing is doing more to cement the medical profession than anything else. I recall a case in Kingsport; one of the doctors from an adjoining county said he thought all the doctors in Kingsport knocked him and expressed surprise at the cooperation given him in a suit. He later told me that the suit was the greatest blessing that ever happened to him because the medical profession was solid back of him.

Going back to the insurance companies, they have a stipulation in their policies by which they are responsible for any judgment whenever they claim a right to defend a suit because they do not want a judgment. Two or three companies wanted us to pay the fee after the case was settled. When a doctor comes to me and tells me he carries old line insurance and has been sued, I always tell him to send me the details of the suit. These are sent to the counsel and our counsel stands ready to defend him. If it is necessary for our counsel to defend, we will give from \$125.00 to \$175.00 to protect our doctor. We will give our moral support and professional support and get witnesses if wanted. They usually want to do it themselves. If we were standing all the expense we could not do it on \$3.00 a year from each member. Many of the counties have every man paid up but they do not guarantee the fee. Six counties in my district guarantee the fee. I would like to know whether or not you would like to have all the counties guarantee the fee.

Another thing I would like to have instruction on is whether or not you would give this Committee authority to refuse to accept the medical defense fee in counties where suitable lawyers cannot be employed. After the fee has been paid if a suit is brought we are morally bound to give that man support, but we cannot go on and pay \$1,050, according to the report. We are running behind. I would like to have your action on that.

DR. L. L. SHEDDAN: I will withdraw my motion to accept the report. (The seconder consented to the withdrawal.) I now move that the Committee on Medical Defense be granted the power to exercise their own judgment in any county where suitable attorneys cannot be procured to carry on medical defense. They are more familiar with this and they know the workings of this. To give them discretion in this matter would be the best way I know to settle it. (Motion seconded by Dr. J. G. Allen.)

DR. W. K. SHEDDAN: We have counties all over the state in which this lack of lawyers would apply.

DR. S. R. MILLER: I do not know. You never know until the lightning strikes. We do not take care of any cases except where there is a medical society.

DR. W. K. SHEDDAN: I do not think we ought to withdraw our protection, especially our moral support. Back of this is the thought that this matter is worth more to the profession from a moral standpoint than from any other point. To have the profession of Tennessee get behind a man who is being prosecuted for some insignificant affair is worth more than money. Suppose he is sued for something that any man in the community knows he is not guilty of, to have the profession back of him is worth a great deal.

There are not more than two or three lawyers in our county who will bring a suit for malpractice. I am perfectly willing that Dr. Miller, so long as he is Chairman of the Medical Defense Committee, be given that privilege, but I do not think it is right to withdraw our moral support.

DR. H. L. FANCHER: I wish to second Dr. Sheddian's motion for the reason that this State Medical Association should extend medical defense to all of its members if they desire. I think it would be unwise to refuse a man in my county help for the reason that they did not have legal help in that county. I believe that if it costs five times more in an adjoining county to me to defend one of my professional brothers, I would be willing to go down in my own pocket and help out. As long as this is a state measure, fostered by the State Medical Association, I believe it would be unwise to deny any member of the State Association defense, regardless of what it costs to defend.

DR. B. F. HARDIN, Memphis: If I understand Dr. Miller correctly, his idea was to give the Committee discretion as to whether they pay the attorney the full amount or only a certain part.

DR. L. L. SHEDDAN: My motion was on Dr. Miller's report, namely to give him power of deciding in the counties where suitable legal talent cannot be secured.

DR. B. F. HARDIN: Just leave them as they are, to go on and pay pro rata as before.

DR. C. P. FOX, Greeneville: I think there is a legal question in this. Dr. Miller says he does not know in which counties suitable attorneys can be procured; for instance, in my county a suit is brought against me and the Committee tells me that no action can be brought; I have a legal claim against that Society. I would be opposed to any motion that would carry with it such a proposition.

DR. A. F. RICHARDS: I am of the opinion that all of this discussion is out of place and time consuming. The report of Dr. Miller shows that he is able to do the work. We assumed the work of carrying this defense. I believe we are morally and legally bound to defend every suit brought regardless of whether there is an honest lawyer or a dishonest lawyer in that man's county. We are losing some valuable time and getting nowhere. After all we have our Medical Defense Committee, we have agreed that this fee of \$1.00 per member be charged, and if we will get such defense as has been practiced up to the present, I do not think we have any right to change the ruling.

DR. L. L. SHEDDAN: Dr. Miller asked for some instructions. My first motion was to spread the report on the minutes and then the suggestion was made that we have some discussion. Dr. Miller states himself that if a man pays his defense fee we are legally and morally bound. His

idea is to refuse the medical defense fee from the man in a county where he cannot make satisfactory arrangement with the lawyers.

DR. S. R. MILLER: I only asked for instructions; I am standing for the motion.

DR. T. R. RAY, Shelbyville: It is our duty to get behind our members when they are in trouble. A man who is unfortunate enough to live in that poor county needs our defense.

I want to offer as an amendment to Dr. Sheddan's motion, that it be left to the discretion of this Committee as to the amount that they will pay in such counties.

THE SECRETARY: I might just state that the amount to be paid for medical defense is stated in the by-laws and cannot be changed by motion from the floor. I think if this power is given to the Committee to reject the defense fee it will work a hardship on the very man who needs it most and it is going to cause confusion among the membership and certainly in my office where every effort has been made to have the members pay the medical defense fee. If we change at this time what seems to be a reasonably satisfactory working in this matter, we are going to complicate things and disrupt not only our medical defense but our membership.

DR. T. R. RAY: My motion was that this Committee exercise their judgment as to the attorney's fees.

THE SECRETARY: I think that is understood.

THE SECRETARY: The amount to be paid the attorneys should be left to the Committee. If I understood it correctly, Dr. Sheddan's motion was that where there are incompetent lawyers in a community this Committee would have the power to refuse to accept the membership of that county for medical defense.

THE SPEAKER: For the benefit of those who came in late, I wish to state that Dr. Miller filed a report of his Committee and in that report refers to cases in which the Committee was called on to defend a case in which the doctor had employed counsel before the Committee was called in. The cost of the attorney's fees came to over \$1,000.00 which the Committee refused to pay. They offered to pay their usual part and the doctor was called on to pay the balance. Dr. Miller asked for instructions in the event of a similar happening. The motion before the House is that the Committee be given power to use their best discretion in paying attorney's fees instead of withdrawing support in the counties in which lawyers cannot be secured at the price the Committee is willing to pay.

DR. L. L. SHEDDAN: I accept the amendment. It will only be necessary that the Committee on Medical Defense be given the discretion to say how much money will be paid the attorneys in any particular case. This man refuses

to accept the amount of money our Committee wants to pay. Unless there is something definite in the matter they can bring suit against the Medical Defense Committee and collect the \$1,000.00. Any insurance company has a right to select a lawyer and make the fee.

DR. W. K. SHEDDAN: Dr. Miller asked the privilege of deciding whether he would accept the medical defense fee in counties in which there were no good lawyers.

DR. S. R. MILLER: They cannot sue the Committee. They have made an agreement with the doctor. We tried to get him to employ our counsel. I believe from the result of this suit it would have been better, but this man had made an agreement for \$500.00 and the lawyer would not accept anything. Then we agreed to pay the amount that we are accustomed to pay for that type of work. We pay a certain amount of money for each day. If you gentlemen want to arrange to see that every county society guarantee its entire membership for medical defense fee, then this Committee will be prepared to go to that county and employ retaining counsel at the price we wish to pay. Many counties pay \$1.00 this year and nothing next year. We do not know what will happen from year to year. I am going to give up this work shortly but I want to get it really well organized before I turn it over to some other group or to the Secretary and the trustees. I want to get counsel retained. If the counties will agree to guarantee this fee their delegates can come up here next year instructed and we can get counsel in practically every county where they guarantee the fee.

THE SPEAKER: We will vote on the motion. (Motion carried.)

## REPORT OF COMMITTEE ON CANCER

Dr. William B. Burns

Your Chairman was appointed to the Chairmanship of the Committee on Cancer Control for the reason that he is the State Chairman of the American Society for the Control of Cancer for Tennessee and with the hope that a better coordination of our activities might be effected.

Soon after the appointment of your Chairman to the State Committee, he took up the matters at issue with Dr. George A. Soper, Managing Director of the American Society for the Control of Cancer. After some correspondence and a visit by Dr. William F. Wild, a field director for the American Society on October 25, 26 and 27, your chairman outlined to Dr. Soper what, in his judgment, would best prepare the medical profession and the public for a better understanding of the Cancer Problem.

The plan your Chairman outlined to Dr. Soper was that the American Society furnish each doctor in the State of Tennessee a copy of the handbook on cancer control which is gotten out by the American Society. And that your Chairman

would undertake to further the work in one or more signed articles or editorials in the Journal of the State Medical Association. Such articles to urge careful reading of the handbook and efforts on the part of the different county societies to study and teach the subject matter of the book and finally to carry the whole program to the public.

Dr. Soper in his reply to your Chairman's suggestions agreed to the several suggestions, but finally stated that the American Society was not possessed of sufficient funds to put out the number of books that would be required. On the basis of 3,228 licensed physicians in the State of Tennessee, it would cost for the printing, binding, wrapping, addressing and posting, complete, \$936.12 to have every doctor get a copy. Nothing further has been heard from Dr. Soper.

Your Chairman in conference with the President of the State Association, Dr. Frank D. Smythe, outlined what he thought was an ideal working force to put over an A-1 Cancer Campaign. All of the full time health officers of the State were placed on the Committee for Cancer Control and with an open Journal to carry the proposition to the Physicians of the State we expected to accomplish more than we have ever done before; but and since the American Society did not see fit to take advantage of this ideal and workable plan there seemed, to your Chairman, nothing further to do.

DR. M. S. HERRON: I move that the report be accepted. (Motion seconded and carried.)

#### REPORT OF DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

DR. L. L. SHEDDAN: Owing to illness I was unable to attend the meeting and have no report to make.

#### REPORTS OF COUNCILLORS

First, Second, Third, Fourth, Seventh, Eighth, Ninth and Tenth Districts.

THE SPEAKER: The report of the Seventh District also has the resignation of the Councillor appended to the report. This necessitates some action on the resignation.

DR. S. R. MILLER: I move that the resignation be accepted and that the Nominating Committee be informed. (Motion seconded and carried.)

DR. M. S. HERRON, Jackson: In presenting the report of the Eighth District I would like to ask advice as to what to do with the counties that have gone into the Tri-State Society. It seems they have to a certain extent drawn away from the State Association. They meet once a month at McKenzie, Tenn., they have a good program and always have some foreign doctor present a paper. The plan is very nice but it seems to have done away with two of my county societies and one from the Ninth District.

THE SPEAKER: Dr. Gallagher says they are

affiliated and in that event, I would notify the Councillor of the Ninth District to make a report.

DR. S. R. MILLER: Those who have not acted as Councillors have no idea how hard it is to get reports. First of all, we do not know who the new secretary is. If we could have some arrangement by which the Secretary of the Association would write the Councillors and tell them who the new officers are, it would save a great deal of work. On the first of January I send the Secretary of each society a greeting card. If we would add to the card a request for the list of new officers I believe we would get them more promptly.

DR. J. C. WILSON, Rockwood: I think we ought to make a drive for a little better organization of the county societies in the State of Tennessee. From these reports we gather that there are counties that are not organized at all; these counties have a large number of doctors. I think we should do a little missionary work. This idea of an organized medical profession originated with that grand old man, John A. Wyeth, of New York. I think we ought to get together and make this effort to get every doctor in the state into a county organization. Rhea County has quite a number of doctors.

THE SECRETARY: I want to heartily endorse what Dr. Wilson has said and to assure you that the Secretary's office will be glad to cooperate in every way it can. Dr. Wilson spoke of Rhea County. The organization of that county was effected by a man who was not a doctor, but had a Ph. D. degree. They met for a time and then he wrote me that the organization had dropped. Just what to do to stimulate interest in the county medical society I do not know. I have thought of every conceivable plan. Dr. Sheddman has tried the plan of putting a notice of the meeting in the local newspapers. I will be glad to do anything I can to help out. I want to organize every county in the state if it can be organized.

DR. W. K. SHEDDAN: The question of the success of the county medical society depends on the secretary more than on any other individual. When I was elected secretary of my county society, instead of sending out a stereotyped postcard to every member of the society, I made it a rule to write an individual personal letter and I endeavor to get that to the members about three weeks before the meeting. We have arranged joint meetings with neighboring societies. In the last year we had 27 active members in our organization and our attendance during the last fifteen months has been better than 60 per cent. It takes persistent, continuous work on the part of the secretary to keep up the attendance and the interest. Another

thing I do, on the Friday before the meeting I go to our local paper and insert a notice of the meeting and then after the meeting I send another notice telling about the meeting. It is getting so that a man has to apologize to his clientele if he has not been at the medical meeting. I believe the Secretary of the State organization has a duty to visit the rural districts at least once every year.

DR. J. W. SANFORD: I think it is important that every county society have a well-trained, competent secretary. An inactive secretary will kill a society in two months. We have 21 active doctors in my county and our secretary is competent.

DR. S. R. MILLER: I want to have the Secretary, Dr. Everett and Dr. Sheddman to write some short editorials for publication in the Journal about October and November.

THE SPEAKER: That concludes our Councilors' reports except for the Fifth and Sixth Districts.

DR. W. K. SHEDDAN: I move adjournment until 2 P. M. (Carried.)

### WEDNESDAY AFTERNOON SESSION

The Wednesday afternoon session was called to order at 2:15 P. M. by the Speaker.

### REPORT OF COMMITTEE ON HOSPITALS

Dr. C. N. Cowden

(Report not received.—Ed.)

DR. J. W. SANFORD: I move the report be adopted. (Motion seconded.)

DR. J. C. WILSON: I do not think we should pass this by without a little consideration. This report deals with a very important subject, one of the most important that we have before us today. We are now facing a great shortage of doctors over this country. In five years from now they will be crying for doctors. The hospital I think is the solution for the shortage of doctors. Every county in the state that can afford it should have a hospital. There is some way that each county can have a hospital. I believe that in time there will be some legislation along this line.

THE SPEAKER: There is a motion before the house to adopt this report. (Motion carried.)

### COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. H. H. Shoulders

(Report read by Dr. Shoulders.)

DR. J. W. SANFORD: I move that the report be adopted and published in the Journal. Motion seconded by Dr. W. B. Burns.)

DR. J. W. SANFORD. As long as the railroads have a doctor in every county in the state it would not be wise to try to get any legislation through; then the insurance companies have doctors and we had better not try that; the next thing is that we will have physicians without any work.

DR. DUNCAN EVE, SR.: I think the proposition made by the Chairman of the Committee, reflecting as it does on railroad surgeons and other surgeons, is uncalled for. I move you, therefore, that this report be laid on the table. (Motion seconded.)

DR. H. H. SHOULDERS: I wish to make a statement.

THE SPEAKER: A motion to table has precedence over everything.

DR. H. H. SHOULDERS: I want to task in what particular the report reflected on any surgeon.

(Motion to table report carried.)

DR. W. S. ANDERSON, Memphis: Do the men who are employed by the railroad come under the compensation law?

THE SPEAKER: Yes.

THE SECRETARY: Do I understand that this report is not to be published in the Journal?

THE SPEAKER: Yes.

THE SECRETARY: I rise to a point of order. As I understood the handling of Dr. Shoulders' report, when it was read, Dr. Sanford moved its adoption and publication in the Journal. Dr. Eve moved the tabling of Dr. Shoulders' report. The report of a Committee cannot be tabled. The way that I interpret it is that the report is in the hands of the House of Delegates, and the Secretary, as a report. I do not wish to take any sides, but I think it is not right that a report should be read and not published. My idea would be to publish the report and then detail the action on it.

DR. DUNCAN EVE, SR.: I think that would be unnecessary. I think it might be said that a report was made by the Chairman of the Committee and was rejected. There is no need of publishing it.

THE SECRETARY: I would think it would be in order to move that the report be published, because it is the duty of the Secretary-Editor to publish the reports of Committees. If the House of Delegates instructs me not to publish the report, I shall not do it.

DR. M. S. HERRON, Jackson: I make a motion that the report be wiped from the records of this Association and from the House of Delegates. (Report seconded by Dr. Duncan Eve, Sr.)

DR. L. L. SHEDDAN: I have no interest in this report any more than it does seem to me that to put it in that particular form is really a discourtesy to the men who have tried honestly to be of service. They may have been mistaken. The statement that Dr. Gallagher has made that the report be published with the action of the House of Delegates would not carry any discourtesy.

DR. M. S. HERRON: I want to say that it is not my policy to treat anybody with discourtesy, but the Speaker and I were both treated with dis-

courtesy by the members of this Committee. We were on the Committee and because we disagreed with the Chairman of the Committee and the President of the State Medical Association they fired us from the Committee. We were opposed to it from the very first.

(The motion that this report be stricken from the records was carried:)

### REPORT OF COUNCILLORS

The report of the Councillor from the Sixth District was received.

THE SPEAKER: This concludes the Councillors report. The next order of business is the election of Councillors. We have for election Councillors from the seven districts with the exception of the Seventh District, in which the Councillor has resigned.

### ELECTION OF COUNCILLORS

The election of Councillors resulted as follows:

Second District, S. R. Miller, Knoxville.

Fourth District, Z. L. Shipley, Cookeville.

Sixth District, Howard King, Nashville.

Seventh District, R. S. Perry, Columbia.

Eighth District, M. S. Herron, Jackson.

Tenth District, W. S. Anderson, Memphis.

### REPORT OF THE AUDITING COMMITTEE

Dr. W. S. Anderson

The Committee examined the Treasurer's report and found it O. K. and have so indicated.

THE SPEAKER: If there are no objections the report will be received and the Committee discharged.

### SPECIAL REPORT OF COUNCILLORS

Dr. S. R. Miller

The Council met at 5 P. M., April 21, in the Hermitage Club.

The following Councillors were present: C. P. Fox, First District; S. R. Miller, Second District; J. W. Breeding, Third District; Z. L. Shipley, Fourth District; J. P. Taylor, Fifth District; K. S. Howlett, Seventh District; M. S. Herron, Eighth District; E. H. Baird, Ninth District, and the Speaker ex officio.

The postponement of the meeting from April 14 to April 21 was unanimously approved.

It was recommended that the revised constitution as offered by the Committee be read before the House of Delegates and adopted as read unless there be serious objections to its provisions.

It was recommended that a committee of three with the Secretary of the Association as one of the three, be appointed by the Speaker to work out a detailed plan with estimate of cost for giving graduate medical instruction in communities remote from medical centers and submit their report to the House of Delegates in 1926.

It was also recommended that the Trustees of the Association invest ten thousand dollars of the funds belonging to the Association in tax free, safe securities at a better rate of interest than received on bank balance.

The Council endorsed all the official actions of the Secretary during the past year and commended his efficient service.

THE SPEAKER: It is not usually customary to act on the Councillors report but inasmuch as in this case it covered a considerable scope I take it that a discussion is in order.

THE SECRETARY: As I take it, the Council was not acting in an official capacity but as a Committee.

DR. W. S. ANDERSON: I move that the report be adopted as read. (Motion seconded by R. H. Newman.)

THE SECRETARY: Inasmuch as this Committee has recommended the giving of graduate medical instruction in rural communities and the appointment of a Committee to consider the plan for so doing, I will give all the information I have to the Committee.

THE SPEAKER: The report refers to the Secretary and two other members.

THE SECRETARY: The second point, the recommendation that \$10,000 be invested in safe bonds, I think is an excellent one. I would like to ask, however, that they leave the Secretary a little larger working margin to conduct the affairs of the Association. This would relieve me of some worry. I do not feel that the Treasurer or myself are business men enough to take the responsibility of investing this money.

THE SPEAKER: The report simply recommends this to the Trustees.

DR. C. N. COWDEN: Take it up with your banker.

THE SECRETARY: The bank here gives me 3 per cent on the average daily balance in the drawing account, so that we have not been without interest but it is true we could double it if it were invested in securities paying a higher rate of interest.

DR. G. C. SAVAGE, Nashville: In the first place this body is not for profit, so that it is not necessary to consider tax-free securities. Any securities may be purchased.

Another thing is that the missionary work should be done without any cost. Almost any man in any county can be prepared to speak to the public on public health matters without any cost to the organization.

THE SECRETARY: I do not think you are familiar, Dr. Savage, with the plan that has been outlined. It is along the lines of the plan in effect in North Carolina, Georgia, and Pennsylvania. It is not the idea to instruct the public, but to bring graduate medical instruction to the doctors. Instead of going to Chicago, bring Chicago to Peter Ridge.

Dr. S. R. MILLER: I want to say a word to Dr. Gallagher about the reserve. The Council thought there would be some money coming in at this meeting. It would not want the trustees to

handicap the Secretary or the Journal. We know the trustees will handle it in the right way.

**THE SECRETARY:** It has been the custom that the money collected from the exhibits be turned over to the local county for the entertainment. Most of the money for dues has been collected. There will be some money received for advertising, but the advertising does not pay for the Journal.

**Dr. T. R. RAY:** It seems to me this discussion has been on the amount of money to be invested in bonds and the amount to be left to the Treasurer. It seems to me it would be a wise plan to leave the amount to be invested in the hands of the trustees and the Treasurer.

**THE SECRETARY:** As a matter of fact, the constitution states that the publication of the Journal is in the hands of the trustees.

**Dr. T. R. RAY:** I would like to move an amendment to the motion before the House, that the amount of money to be invested be left to the discretion of the trustees and the Treasurer. (Motion seconded by Dr. W. K. Sheddan.)

**Dr. W. S. ANDERSON:** I accept the amendment. (The seconder also accepts.)

(Motion as amended is carried.)

#### NEW CONSTITUTION

**THE SECRETARY:** As chairman of the Committee to Revise the Constitution, I outlined in my Secretary's report the method of procedure. As I understood it, several suggestions in my report at the Knoxville meeting were adopted at that time, and, in addition, Dr. L. L. Sheddan asked us to consider changing the time and place of meeting. This committee, in my opinion, was acting as a constitutional committee, and their revision would be the new constitution and by-laws of the State Association, providing the changes were published in the Journal. My procedure in revising it was to take the last published pamphlet in 1918 as the basis. The minutes of the House of Delegates were carefully studied for any revision in the constitution and by-laws from 1918 up to and including 1924. A copy of this revision was sent to Dr. Richards and Dr. Miller, the members of the committee. This revision was entirely approved by Dr. Richards, but Dr. Miller returned the copy saying that he had prepared one which he thought much better, but he did not send a copy of his revised constitution and by-laws to either Dr. Richards or myself. Yesterday we attempted to go over the two revisions and to reconcile them. That is too much work to be accomplished in a few hours. We would ask that this committee be retained; therefore, that the same power be delegated to them and that they formulate a constitution and by-laws which will be printed and sent to each member.

**Dr. J. C. WILSON:** I move that these three men be retained on the committee, and that a printed copy of the revised constitution and by-

laws be sent to each member.

**Dr. W. K. SHEDDAN:** I would suggest that the revised constitution and by-laws be sent to the county societies for action. That would make it straight and regular.

**Dr. S. R. MILLER:** I do not mean to be antagonistic to Dr. Gallagher, but I felt my revision was a little better than the one he had made.

(Motion made by Dr. Wilson seconded and carried.)

#### NEW BUSINESS

**Dr. A. F. RICHARDS:** I have a resolution that I want to introduce to the House of Delegates:

"To His Excellency, the Governor:

The Tennessee State Medical Association in session, in Nashville, Tenn., on this date beg leave respectfully to call to your attention the very great interest manifested among the doctors of the state in the management, care of, and prevention of tuberculosis.

"The bill passed by the last Legislature providing for the creation of a Tuberculosis Commission, which is empowered to study the problem of tuberculosis hospitalization and to prepare a report for the next Legislature, is of vital interest to the medical profession, and we therefore respectfully request that in making your appointments to this commission, that organized medicine be given adequate representation, and further suggest that each grand division of the state be equally represented from the list herewith submitted."

The list has not been appended, but it is suggested that the Speaker of the House at a suitable time after he has an opportunity to give it thought, will append a list of physicians who will fill this requirement. I move you the adoption of this resolution. (Motion seconded by W. K. Sheddan.)

**Dr. T. R. RAY:** I want to say that I think this resolution is timely and in order because if we are to make this survey of tuberculosis in Tennessee a scientific one we must insist that the men who are capable and willing to give their time and attention, make this report two years hence. I think this resolution should be acted on at this meeting.

(Motion carried.)

#### REPORT OF HISTORICAL COMMITTEE

**Dr. Duncan Eve, Sr.**

I can report progress. The committee has this matter well in hand. One member of the committee, Dr. D. G. Roberts, died a few weeks ago. It was through his endeavor almost entirely, because Dr. Savage and myself left the matter to him, that the work has been so completed so far. He went at it systematically. We believe that if we can wait until the next meeting before presenting a complete report that the work will be practically finished. We want to go over the man-

uscript again, and if anything has been left out we shall add it."

DR. G. C. SAVAGE: We have eight years in which to finish this work, for it covers a period of a century. The work so far is well done. Dr. Eve and I can very freely make that statement for the reason that we have not done the work ourselves. I want to say in behalf of Dr. Roberts' memory that his appointment was very fortunate. There was no man in the state who could have written the early history of medicine in Tennessee better than Dr. Roberts. The more recent records he did not have in his grasp, but those are easily worked up. Dr. Eve and I expect to help you celebrate the one-hundredth anniversary of the foundation of the State Medical Association (applause), and expect to be allowed to remain on the committee to the end, but we want some one else named to take the place our our lamented Dr. Roberts—some one who is willing to do the work.

DR. DUNCAN EVE, SR.: I just want to add that we are expected to report on this work in three years' time. I think the suggestion of Dr. Savage that another gentleman be added to the committee is very proper.

THE SPEAKER: My purpose in calling for the report of the committee at this time was simply to see if the House of Delegates could render assistance to you in your work, knowing that Dr. Roberts had died. I did not know whether you wanted some one else or not or whether the House could provide funds for your use.

DR. DUNCAN EVE, SR.: We would like to have another member.

DR. G. C. SAVAGE: I will add that we would like a little more money. The whole manuscript will have to be re-typed. The money originally appropriated, \$100.00, has been spent. I think \$50.00 would be sufficient.

DR. W. K. SHEDDAN: I move that the request of Dr. Eve and Dr. Savage be granted and that the Speaker appoint some one to act with them, and that the House of Delegates appropriate \$100.00 for their use.

(Motion seconded.)

DR. J. W. SANFORD: I withdraw my motion. (Seconder consented to the withdrawal.)

DR. W. W. TAYLOR (Memphis): In view of Dr. Savage's remarks and relative to the appointment of a new member on the committee to fill the place of the lamented Dr. Roberts, I have a man in mind who is eminently fitted to fill that place so far as I can tell. He is a splendid historian. I refer to my fellow county doctor, Dr. G. W. Moody, of Shelby County. I wish to place his name in nomination to fill that place.

THE SPEAKER: I would not call for nominations at that time. The motion now before the House is that we appropriate \$100.00 to the committee and appoint some one to take the place of Dr. Roberts.

DR. A. F. RICHARDS: I would like to amend Dr. Shedd's motion that we appropriate such money as the committee needs not to exceed \$100.00.

(Amendment seconded.)

DR. C. N. COWDEN: It seems to me that the choice of a new member should be left with the committee.

THE SPEAKER: I am glad that has been suggested because I would have suggested it myself.

DR. SHEDDAN: I accept both amendments.

(Motion as amended carried.)

Adjournment until 9 a.m. Thursday.

#### THURSDAY MORNING SESSION

The Thursday morning session was called to order at 9:15 a.m. by the Speaker.

DR. W. F. CLARY: On account of many of the delegates leaving for home a good many counties have no representation here this morning. I would like to suggest that in counties where there are no delegates present if some other man from the county is here that he be qualified to serve as delegate for this session. I so move.

(Motion seconded and carried.)

A delegate from each county was then seated and the work of the session taken up.

#### REPORT OF NOMINATING COMMITTEE

##### Dr. Shields Abernathy

President: W. C. Dixon, Nashville (elected); Perry Bromberg, Nashville; K. S. Howlett, Franklin.

Vice President: J. D. Brewer, Dyersburg (West Tennessee); B. S. Rhea, Lebanon (Middle Tennessee); F. A. Neergaard, Harriman, (East Tennessee).

Secretary: J. F. Gallagher, Nashville.

Speaker: H. B. Everett, Memphis.

Trustee: J. O. Manier, Nashville.

Delegate to the A. M. A.: J. A. Witherspoon, Nashville; J. B. McElroy, Memphis, alternate.

On motion, duly seconded, the above nominations were approved and the officers duly elected.

THE SPEAKER: I appoint Dr. H. M. Tigert and Dr. Duncan Eve, Jr., a committee of two to announce to Dr. Dixon that he has been elected President and to present him to the General Session.

DR. J. F. GALLAGHER: I do not know whether to thank you or condemn you. I have given my very best efforts in trying to make the Tennessee State Medical Association the very best in the country. How far I have succeeded you can judge better than I. I may be proud enough to boast of this meeting which in many respects is the most successful meeting that the Association has ever held. We had the largest registration that was ever recorded in a meeting of the Tennessee State Medical Association. We have the largest and most successful commercial exhibits that we have ever had. The remarkable thing about the Scientific program was that up to yes-

terday afternoon only one or possibly two men failed to respond to their papers when called. That could not be accomplished by me alone. I want to here again thank the various committees that have so generously and unselfishly aided me in every way possible in endeavoring to make this meeting a success and to thank the membership of the Society for their hearty co-operation.

In conclusion, I want to say that no man is infallible; and I want to not only ask, but urge, that constructive criticism and suggestions will be gladly received by me to the end that the Society will be worthy of our membership. I thank you. (Applause.)

THE SPEAKER: I appreciate your confidence in me in electing me for another year. It is a pretty hard job at all times in the House of Delegates with as many things as we have to contend with, but I have always tried to do the best I can. If I ever make a mistake I try not to do it intentionally, but simply because I do not know any better. I will try to serve you the best I can during the coming year.

DR. G. C. SAVAGE: There are two points that I wish to bring up. The first is that some provision should be made so that in case of the death of the President, the Vice President from his grand division of the state become President.

THE SPEAKER: As I understand the by-laws, that is provided for. In the absence of the President the Vice President from his division presides.

DR. G. C. SAVAGE: The second thing is that this is the first meeting I ever attended that was not opened by prayer.

THE SPEAKER: I do not know how this happened, but those matters are in the hands of the Committee on Arrangements. We will try to call their attention to it next year.

THE SPEAKER: The next order of business is fixing the meeting place for next year. It comes to West Tennessee, and those of us from Memphis would be glad to have you invite the meeting to come to Memphis for the next meeting.

DR. W. K. SHEDDAN: I move that Memphis be selected as the next place of meeting.

(Motion seconded and carried.)

DR. R. H. NEWMAN (Knoxville): I wish to bring before the meeting the fact that the Eye, Ear, Nose and Throat Section has its meeting the day preceding that of the General Session, and for that reason we finish our papers and the men go home before the completion of the meeting. I would like to make a motion that the Eye, Ear, Nose and Throat Session meet on the same day as the General Session.

(Motion seconded.)

THE SECRETARY: This is a matter of more importance than would appear on first glance. I had extreme difficulty in persuading the officers of the Eye, Ear, Nose and Throat Section to keep the meeting on the first day. I went back and took out the resolution that Dr. Savage introduced in the House of Delegates some time ago, that the meeting be held on the Monday previous to the

meeting of the General Session. That was the basis on which that Section was formed. Waiving that, however, we must remember that the tail should never wag the dog. The Eye, Ear, Nose and Throat Section should be an appendage to this Association. There were over 75 registered in that Section. The Railway Surgeons had a registration of about 75. You take 150 away from the maximum registration, and the General Session is just a Section itself. I believe if such action is taken it will greatly injure the Association as a whole. I have discouraged the formation of a Section on Pediatrics. We are spending money on child welfare and infant mortality, and it is really the general practitioner who is interested in these things, not the specialist. If they go off and have their papers by themselves, the general practitioner gets no knowledge of the subject. The Eye, Ear, Nose and Throat men are in the same category. I move that this motion be tabled.

(Motion seconded.)

DR. J. F. GALLAGHER: I withdraw my motion.

(The seconder consented.)

DR. G. C. SAVAGE: It was a matter of pure selfishness on my part that led me to make the motion I did at that time. I wanted to get the work of the Section out of the way so that I could attend the General Session. During all the years I have been in practice I have tried to keep in touch with general medicine and surgery. I believe if the Eye, Ear, Nose and Throat Section would have fewer luncheons and less golf it could complete its work on Monday and Monday night.

DR. R. H. NEWMAN: The reason I am doing this is to bring this Section more in touch with the General Session. The papers dealing with technic should be read before the Section, and certain papers, selected by the President, that would be of interest to the general practitioner could be read before the General Session. When our work is finished, we want to go home.

DR. A. F. RICHARDS: Relative to this Section, I have been giving it a good deal of consideration, and I am certain that we could not permit this Section to meet at the same time as the General Session without detracting from the General Session. I feel that this Association ought to be for the State at large and that the general practitioner ought to have an opportunity of getting his work from the Section men, and this can best be done in the General Session. I feel if this Section is worth while, as it seems to be, it can meet at some other time when there is no competition at all.

DR. J. F. GALLAGHER: I move that Dr. Newman's motion be tabled.

(Motion seconded and carried.)

DR. A. F. RICHARDS: I move that we adjourn sine die.

(Motion seconded and carried.)

The meeting adjourned.



DR. W. C. DIXON  
Newly Elected President of the Tennessee State Medical Association

# THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 420 Jackson Bldg., Nashville, Tenn.

J. F. GALLAGHER, M.D. -----Editor  
 R. C. DERIVAUX, M.D. -----Associate Editor

APRIL, 1925.

## OUR NEXT PRESIDENT.

The election of Dr. W. C. Dixon as president of the State Association was a worthy tribute worthily bestowed. Dr. Dixon might be classed among the younger element of the profession, but has always evinced a keen interest in all matters pertaining to organized medicine. While he has rendered valuable service to the profession of the State, notably as a member for a number of years of the legislative committee of the State Association, yet it has always been done in keeping with his inherent traits of modesty and of unostentation.

Dr. Dixon is a graduate of the Medical School of Vanderbilt University and has practiced medicine in Nashville since his graduation. He is now associate professor of clinical gynecology in his Alma Mater.

## THE NINETY-SECOND ANNUAL SESSION.

It may be said with pardonable pride that the ninety-second annual session of the Tennessee Medical Association, which was held in Nashville, was one of the most successful in the history of our association. The place of meeting was admirably adapted to the needs, and the Committee of Arrangements of the Nashville Academy of Medicine spared no expense to provide for the visitors.

The registration was the largest ever recorded and the number of commercial exhibits was likewise the largest on record.

Marked interest was displayed in the scientific papers and this is evidenced by the fact that of the first twenty-six papers called, twenty-five responded. The dry clinics, which were held on the morning

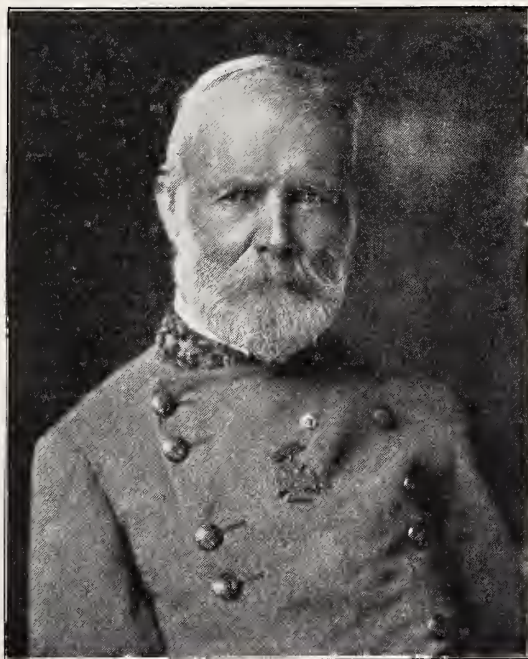
of the second day, was in the nature of an experiment, but from all that can be learned they were a success, both from the standpoint of the clinicians and the visitors.

The dinner tendered visiting members was an evidence of the generous hospitality of the Nashville profession.

One regrettable feature was the fact that our esteemed president, Dr. Frank D. Smythe, was unable to do no more than to open the session on account of his ill-health.

While it is with pleasure that the success of the Nashville meeting is recorded, it is hoped that the next annual meeting, which will be held in Memphis, will surpass this one.

## DEATHS



DR. DEERING J. ROBERTS.

Dr. Deering J. Roberts died April 26 at St. Thomas Hospital, Nashville, age 85. Dr. Roberts was born in Davidson County on May 10, 1840. He had been a practicing physician in Nashville for more than fifty years before he retired from active practice, more than twenty years ago. In addition to his professional practice, he

published and edited the Southern Practitioner, a publication of wide circulation and popularity. He had a strong leaning towards literature and his editorials were vigorous and learned.

Dr. Roberts was a Confederate veteran. His inclination and preference was for the cavalry, and he aided in raising a squadron for that service, but the difficulty in securing equipment finally determined his men to join the infantry. He himself became a private in Company C, Rock City Guards, Col. George Maney's regiment. He was later transferred to the Twentieth Tennessee Infantry as surgeon. He saw service at Cheat Mountain, Vicksburg, Baton Rouge, Murfreesboro, Hoover's Gap, Chickamauga, Missionary Ridge, Dalton, Atlanta and Franklin. He was captured at Franklin while attending Hood's wounded following the bloody battle at that place in 1864. He was confined in prison at Fort Delaware and Fortress Monroe and was finally exchanged at Bermuda Hundred, Va., on January 22, 1865. He was paroled at Greensboro, N. C., following the surrender of Gen. Joseph E. Johnston's army.

Dr. Roberts resumed the practice of medicine in Nashville in 1865. He was a man of kindly impulse and proud of his record in the Confederate Army. He was a member of Frank Cheatham Bivouac, and it was his delight to meet with that organization and all other Confederate gatherings. Dr. Roberts was at one time President of the Tennessee State Medical Association and was for a few years a teacher of medicine in the Medical Department of the University of Tennessee. Later he was connected with the Medical Department of the University of the South. Just before his death Dr. Roberts had compiled the data for a history of the Tennessee State Medical Association, which is to be completed and presented at the centennial celebration of the Association in 1933.

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Dr. LaFayette Hill, of Covington, died March 22, aged 75. Dr. Hill was a graduate of Missouri Medical College of St.

Louis in the class of 1875 and was a member of the Tipton County Medical Society.

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Dr. H. C. McGregor, of New Providence, died April 3, aged 53. Dr. McGregor graduated from the Medical Department of Vanderbilt University in June, 1905, and practiced his profession in Montgomery County until his death.

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Dr. William Wood Taylor, of Memphis, died April 7, aged 70. Dr. Taylor was born in Brownsville, Tenn., and was a graduate of Bellevue Hospital Medical College in New York City in the class of 1876. After his graduation he returned to Brownsville and practiced his profession there until he moved to Memphis in 1884, where he practiced until his death.

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Dr. Edward E. Haralson, aged 70, died April 19 at his home in Clarksville. Dr. Haralson was a graduate of Vanderbilt University Medical Department in the class of 1878.

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Whereas, Dr. William Taylor Foute, of Lenoir City, died at the Knoxville General Hospital, March 29, 1925, thus closing a long life of service to his town and community, having been a practicing physician for many years, giving himself freely to alleviate suffering and to prolong life, enduring the hardships incident to country practice, thereby winning the love and respect of the entire community.

Whereas, Dr. Foute was the leading spirit in the organization of the Loudon County Medical Society, giving freely of his time and his talent for the benefit of the organization, having at all times conducted himself as becometh a member of such society; therefore, be it

Resolved, That the Loudon County Medical Society deplore the death of Dr. Foute and realize that he will be greatly missed by our membership and that the memory of this stalwart Christian gentleman will incite us to greater effort.

The society appreciates what he has done for the medical profession and for humanity by his earnest and conscientious service, and that even when failing health restricted his labors, his mind and heart were with his co-laborers.

Therefore be it resolved, That every member of the Loudon County Medical Society sympathizes deeply with the loved ones of Dr. Foute in their sorrow for the death of their father, and that a copy of these resolutions be recorded with the records of our society and that a copy be furnished the State Medical Journal, the Lenoir City News and the family.

J. T. LEEPER,  
J. G. EBLEN,  
W. D. PADGET,  
*Committee.*

## NEWS NOTES AND COMMENT

Drs. S. H. Hodge and Olin Rodgers are planning a trip to Europe at an early date.

Miss Rosa Van Vort has resigned as superintendent of the Knoxville General Hospital.

Dr. W. R. Cross has located in Knoxville and will limit his practice to diseases of children.

Dr. Joe T. Smith, of Kansas City, Mo., has located in Knoxville, and will be associated with Dr. Oliver Hill.

Dr. B. N. White, of Murfreesboro, after spending some time doing post-graduate work in the East, has resumed practice.

Dr. B. L. Simmons, of Nashville, has been reappointed member of the State Board of Medical Examiners by Governor Peay.

Mr. T. T. Murray, of the City Hospital of Saskatchewan, Canada, has been ap-

pointed as superintendent of the Knoxville General Hospital.

Dr. James H. McCall, whose home is at Huntingdon, has been transferred from Chicago to Washington in connection with the regional office of the Veterans' Bureau.

Dr. George K. Carpenter, of Nashville, has resigned as resident physician of the Nashville General Hospital. Dr. Carpenter will confine his practice to orthopedic surgery.

Dr. Z. L. Shipley, of Cookeville, secretary of the Upper Cumberland Medical Society, announces a change in the date of meeting from May 26 and 27, to June 9 and 10.

Dr. Horace Powell Conley announces the removal of his office to St. Joseph's Hospital, Memphis, where he is now in charge of the Department of Roentgenology. He invites reference to both ambulatory and hospital cases.

At the recent meeting of the Middle Tennessee Medical Society, held in Shelbyville, Dr. John M. Lee, of Nashville, was elected president; Dr. A. L. Rude, of Ridge Top, vice-president, and Dr. Sam P. Bailey, of Nashville, was re-elected secretary. The attendance was one of the largest in recent years.

The Civic League Hospital at Jackson, which was destroyed last December by fire, will be formally opened as the Memorial Hospital on National Hospital Day, May 12. The new hospital is thoroughly fire-proof and modern in every respect, and is a war memorial.

The names of Dr. U. G. Jones and Dr. C. W. Friberg have been added to the staff of the Appalachian Hospital in Johnson City. Dr. Jones will specialize in eye, ear, nose and throat, and Dr. Friberg in obstetrics. The staff of the hospital now comprises fourteen physicians.

## MEDICAL SOCIETIES

Officers of the Henderson County Medical Society for the present year are as follows: Dr. G. A. Brandon, Lexington, president; Dr. R. L. Wylie, Scott's Hill, first vice-president; Dr. S. T. Parker, Lexington, second vice-president; Dr. J. E. Powers, Lexington, secretary-treasurer; Drs. W. T. Watson, Lexington; C. E. Bolen, Wildeville, and R. L. Wylie, Scott's Hill, councilors.

Officers of the Tipton County Medical Society are as follows: Dr. H. W. Sale, Covington, president; Dr. L. J. Lindsey, Covington, vice-president; Dr. H. C. Currie, Burlison, second vice-president; Dr. B. V. Dickson, Covington, secretary-treasurer.

The Jefferson County Medical Society held a meeting April 7 and elected Dr. W. H. Taylor, New Market, president; Dr. J. H. Walker, vice-president, and Dr. B. M. Tittsworth, secretary-treasurer.

The Lawrence County Medical Society met April 1, and elected the following officers: Dr. W. H. Neal, Lawrenceburg, president; Dr. A. B. Cole, Loretto, vice-president; Dr. T. J. Stockard, secretary-treasurer.

## MISCELLANEOUS

The following letter is self-explanatory:

State of Tennessee  
Department of Public Health  
Nashville, Tenn., May 11, 1925.

Dr. J. F. Gallagher,  
Editor Tennessee State Medical Journal,  
Jackson Bldg., Nashville, Tenn.

Dear Doctor Gallagher: So far as I am aware, no cases of tularemia have been reported in Tennessee. It is known, however, that the infection exists in rabbits from Tennessee, infected rabbits from Greeneville and Shouns having been found on the Washington market. An infected rabbit from Greeneville was found as late

as December, 1924.

A splendid article on tularemia appears in the Journal of the American Medical Association under date of April 25, the author being Edward Francis, who has done the pioneer work in investigation in this disease.

In view of the fact that the disease has but recently been worked out and is, therefore, little known, and further, that the infection is known to exist to certain rodents in this State, would you consider it desirable to call the attention of the profession to the condition through the pages of the Journal?

Very truly yours,  
E. L. BISHOP,  
*Commissioner of Public Health.*

## OPPORTUNITIES FOR GRADUATE MEDICAL STUDY IN NEW YORK.

The Committee on Medical Education of the New York Academy of Medicine has prepared a series of synopses of approved opportunities for graduate medical study in New York City, which will soon be published for distribution. The synopses cover dermatology and syphilology, obstetrics and gynecology, internal medicine, neurology and psychiatry, ophthalmology, oto-laryngology, pediatrics, surgery, urology and orthopedic surgery.

A Bureau of Clinical Information is maintained at the Academy of Medicine, 17 West 43rd Street, where detailed information is available regarding opportunities for graduate medical study in New York, and also in other cities of the United States and abroad. The executive secretary in charge of the Bureau is prepared to answer inquiries concerning ordinary internships, special internships or residencies, graduate courses in medical schools and teaching hospitals, and extension courses. Much information in regard to graduate medical work in England and on the Continent is on file.

The Bureau publishes a Daily Bulletin of Surgical Clinics which will be mailed free to visiting doctors on request. A

Weekly Bulletin of Medical Clinics also is published. A book of the fixed clinics of Greater New York, with a transportation guide, has been prepared for the use of visitors whose stay in the city is limited, and is furnished without charge.

## BOOKS RECEIVED

### NEW AND NON-OFFICIAL REMEDIES, 1925.

Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1925. Cloth. Price, postpaid, \$1.50. Pp. 461+XL. Chicago: American Medical Association, 1925.

New and Non-Official Remedies is the publication of the Council on Pharmacy and Chemistry through which this body annually provides the American medical profession with disinterested critical information about the proprietary medicines which are offered to the profession and which the Council deems worthy of recognition. The book also contains descriptions of non-proprietary medicines which the Council considers worthy of consideration.

In addition to a statement of the actions, uses and dosages of each product, many of these are arranged in classes and these classes are introduced by a general discussion of the group; thus the silver preparations, the iodine preparations,

the arsenic preparations and the biologic products are preceded by a thoroughly up-to-date discussion of the group.

A glance at the preface shows that, in addition to the description of the new drugs which were accepted during the past year, the book has been extensively revised; many of the preparations listed in the previous edition have been omitted and the statements of the properties of others have been revised to bring the descriptions in accord with present day knowledge. Of particular interest is the revision of the general articles; thus the article on endocrine products has been entirely rewritten to bring this chapter in accord with the series of articles on glandular therapy which were published in 1924 under the auspices of the Council. A general article on medicinal dyes has been added.

A section of the book (brought up-to-date each year) gives references to proprietary articles not accepted for New and Non-Official Remedies. This list, in conjunction with the book proper, constitutes a cumulative index of proprietary medicines which physicians may consult when some proprietary product is brought to their attention.

Physicians cannot dispense with the newer remedies that are being brought out, yet they can neither judge them on the basis of the manufacturers' claims nor have they the opportunity or time to determine their merits. For this reason every physician should possess a copy of the annual volume of New and Non-Official Remedies which the Council on Pharmacy and Chemistry puts at his disposal.

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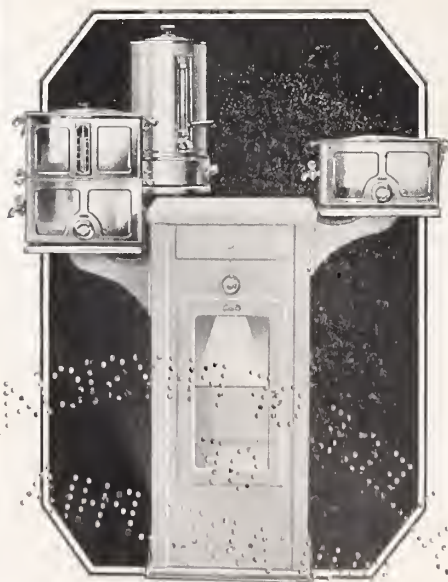
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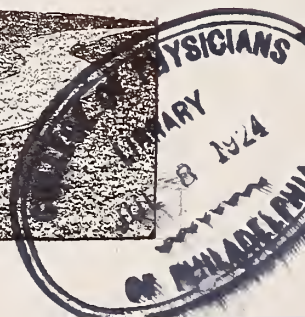
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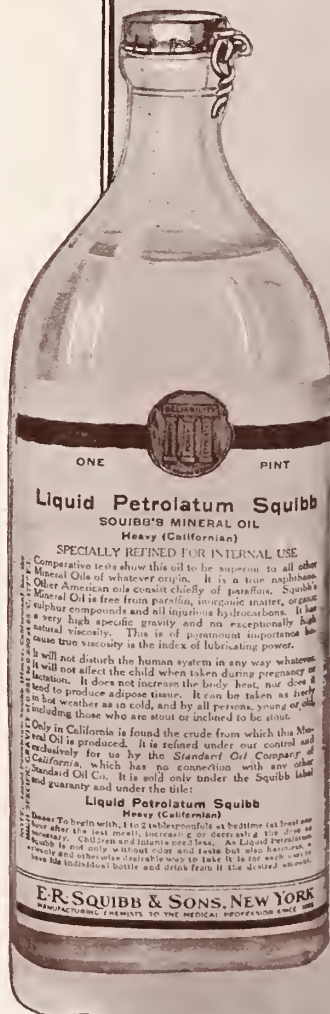
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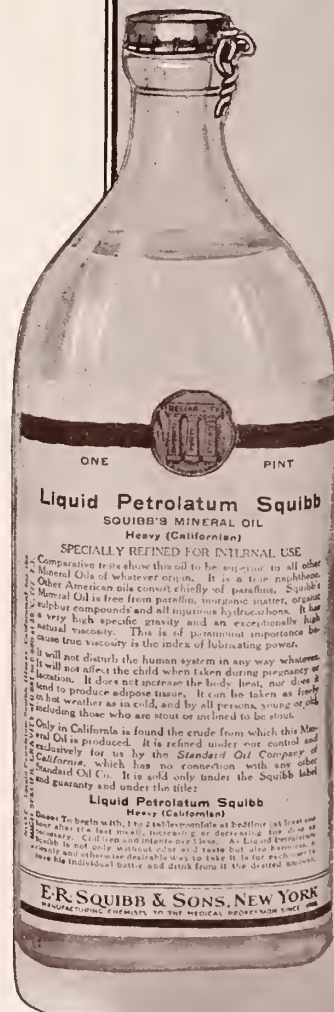
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General Medication in Tuberculosis

"CALCIUM—Certain it is, that patients, especially children, often improve with increased amounts of calcium in their food or as a mendicament."

"CREOSOTE—It seems to be true that many patients have improved appetite under its stimulant or irritant action in the stomach. It may also for a time improve digestion, and the patient often adds weight. During this period there is freuently a lessening of the bronchitis, and, therefore, a decreased expectoration, and with this decrease of the secondary (streptococcie) infection, there is likely to be less fever and, therefore, less sweating." A. M. A.: *Handbook of Therapy*, Ed. 6, p. 201.

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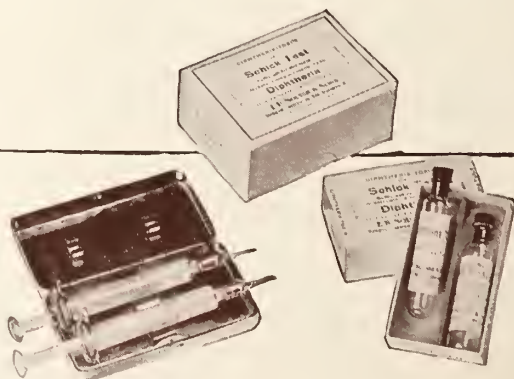
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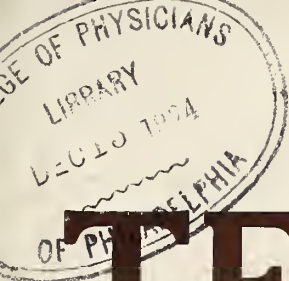


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*(Stokes and Behn, Jour. A.M.A., July 26, 1924, p. 245.)*



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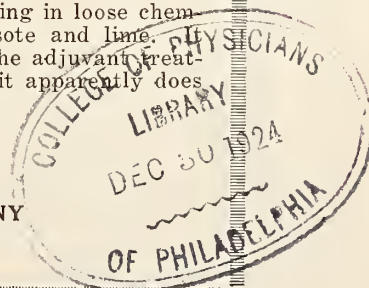
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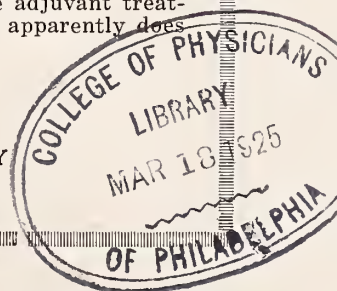
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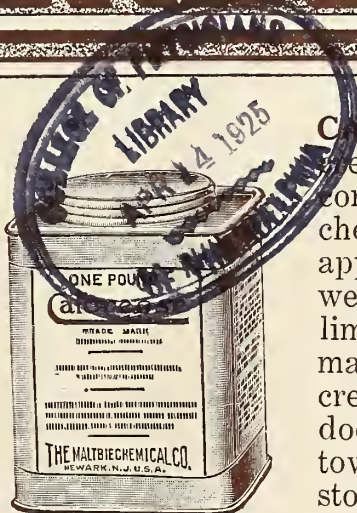
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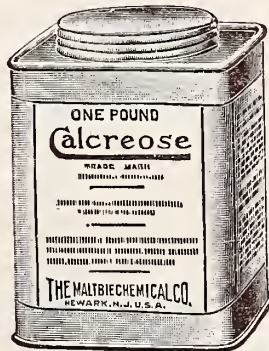
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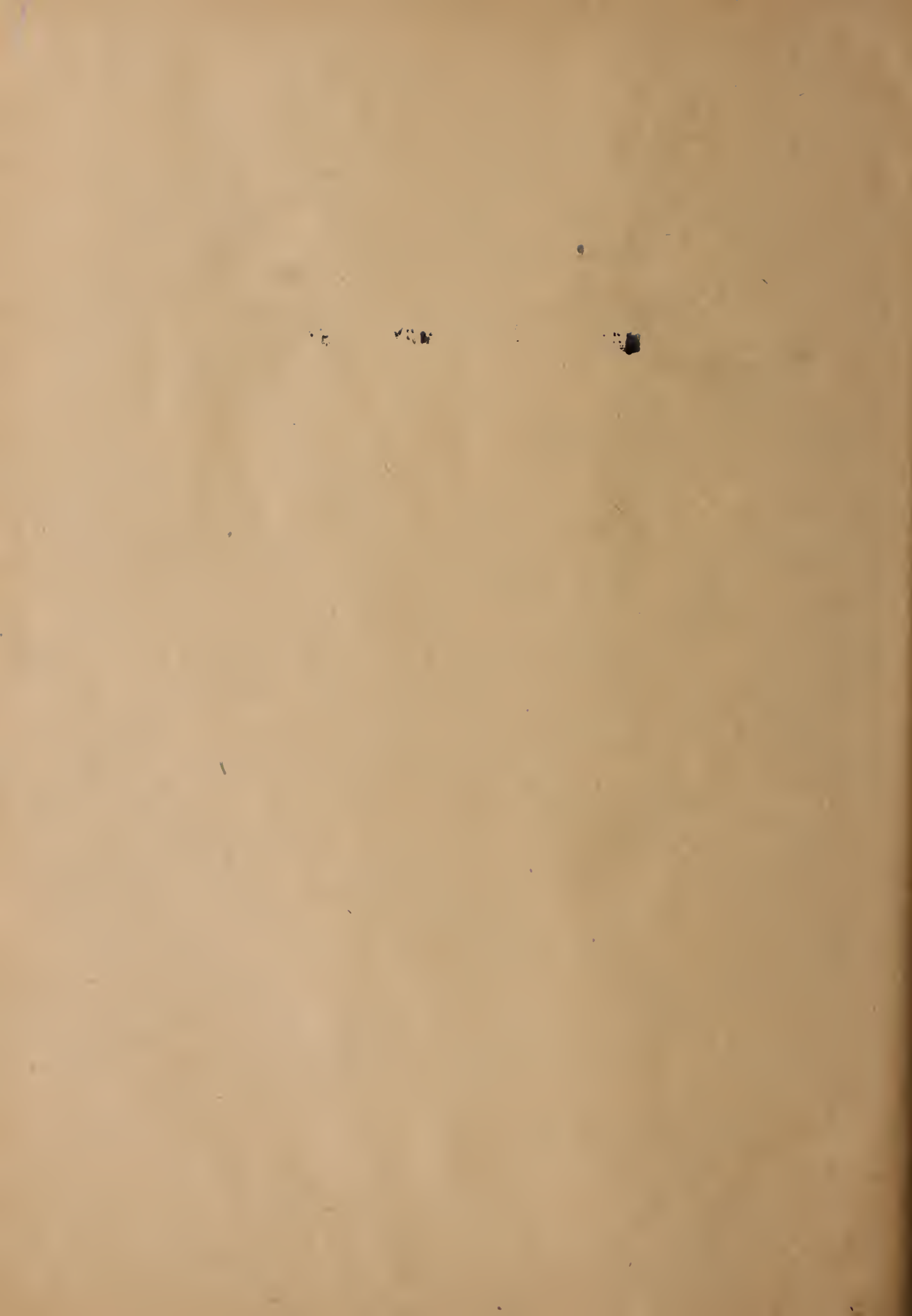
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